

Presquile NWR - Narrative Report -
1969

Presquile National Wildlife Refuge
Narrative Report
Calendar Year 1969

Personnel

*Refuge Manager
*Biological Technician
Maintenance man
Clerk Typist
Laborer (Intermittent)

Paul D. Daly (EOD 7/2/69)
Vacant

Luther B. Vick, Jr.
Irene S. Lipchak

Stephen M. Tomlinson
(EOD 7/17/69 Terminated 12/5/69)

*Replaced John C. Fields who transferred to Pungo Refuge N.C.
on 6/11/69
*Incumbent Raymond McFarland transferred to Catahoula Refuge, La.
on 7/28/69

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I. GENERAL

A. Weather Conditions

Presquile Refuge does not operate its own weather station. Our data is obtained from the official U.S. Weather Bureau station at Hopewell, Virginia which is monitored by the Old Dominion Water Corporation. Readings are made at the city water plant about three miles downriver from the refuge.

| | <u>Precipitation</u> | <u>(In inches)</u> | | <u>Temperature</u> | |
|-----------|----------------------|--------------------|---------------------|--------------------|-------------|
| | <u>1969</u> | <u>Normal</u> | <u>Snow</u> | <u>Max.</u> | <u>Min.</u> |
| January | 2.92 | 3.07 | | 65 | 13 |
| February | 4.37 | 2.76 | | 59 | 21 |
| March | 3.96 | 3.16 | 6.5 | 75 | 14 |
| April | 2.33 | 3.34 | | 88 | 32 |
| May | 3.39 | 3.97 | | 95 | 39 |
| June | 4.28 | 4.23 | | 98 | 57 |
| July | 4.88 | 5.86 | | 98 | 64 |
| August | 6.50 | 5.10 | | 92 | 54 |
| September | 3.57 | 3.73 | | 90 | 44 |
| October | 2.38 | 2.88 | | 80 | 30 |
| November | 2.09 | 2.80 | | 76 | 22 |
| December | 5.55 | 2.78 | T | 60 | 19 |
| | <u>46.22</u> | <u>43.68</u> | <u>6.5</u> Extremes | <u>98</u> | <u>13</u> |

January began the year with below normal temperatures and precipitation. Tides were extremely low most of the month due to strong NW winds. February also averaged colder than normal but with no extreme low temperatures. Precipitation was quite a bit above normal. March saw the first snow of 1969 with $6\frac{1}{2}$ " being recorded early in the month. The above normal precipitation in March helped prepare the ground for spring farming operations.

April and May saw generally pleasant temperatures and normal precipitation. A dry spell in May delayed corn planting a couple of weeks. June and July were extremely hot, humid months but precipitation came at just the right times for the refuge crops.

August, 1969 will be known as the month of the worst James River flood since records were established in the 1800's. Hurricane Camille passed over Virginia from west to east as a severe low pressure system on August 19 and 20, dumping an official 27" of rain in 8 hours on one location along the headwaters of the James River. For the next two days the river continued to rise as the flood crest moved eastward toward Presquile Refuge. On August 22 it crested at 28 feet in Richmond, which is about 20 miles

upriver from the refuge. By the time the crest reached Presquile later that day the flatter topography of the area surrounding us had taken a lot of the water and it only reached 7 foot above normal high tide. The force of the river current as it passed through the narrow ship channel, however, caused us great problems including an estimated \$3,000.00 damage. The flood waters receded rapidly and by August 24th the James was back to normal levels. The flood will not soon be forgotten in this area.

The remainder of August was on the cool side with above normal precipitation. September, October and November for the most part had warm indian summer weather with precipitation slightly below normal. The first killing frost of the fall season occurred on October 22. December was quite a bit colder than normal with average precipitation and only a trace of snow. Freezing rain, however, on December 25 and 26, put power lines down off the refuge and we were without commercial power for 20 hours.

B. Habitat Conditions

1. Water

At present there is no water control at Presquile Refuge. All of our water is tidal James River water and there is a difference of between three and four feet at high and low tides. Tides are lunar but are also strongly affected by the prevailing winds, with north and northwest winds causing lowest tides and northeast and southeast winds resulting in highest tides. If we get an abnormally high tide which we usually do a few times each season; it floods the refuge marshes and swamps making food available for our waterfowl and providing the moisture for the vegetation.

There is no submergent vegetation growing in the James River itself due the extremely polluted condition of the water. The cities of Richmond and Hopewell dump large quantities of industrial waste and sewage into the river and this has created a really foul situation. There was considerable publicity during 1969 about a plan of the City of Richmond to bypass their sewage treatment plant for three months and dump raw sewage into the river during that period. Fortunately the publicity resulted in action by the Federal Water Pollution Control Board who stopped the plans and are providing money for the cities' treatment plant improvement. It is a step in the right direction although it is only a drop in the bucket as far as the polluted condition of the entire river.

Salinity of the river water in the vicinity of the refuge remains low; but there is the possibility that it would increase substantially if the proposed widening and deepening of the channel takes place. This project has been discussed for many years and

there has been a new study team recently appointed to determine its feasibility. Since increased salinity would affect refuge vegetation we have been keeping the following records for several years. These readings were taken by the Old Dominion Water Corporation at a point about three miles downriver from the refuge. The industrial plants in the Hopewell area use large quantities of river water and they cannot use any water that has over 50 parts per million salinity. The following are the highest monthly readings in parts NACL per million parts of water.

| <u>Month</u> | <u>1965</u> | <u>1966</u> | <u>1967</u> | <u>1968</u> | <u>1969</u> |
|--------------|-------------|-------------|-------------|-------------|-------------|
| January | 8 | 36 | 12 | 12 | 12 |
| February | 8 | 39 | 10 | 12 | 8 |
| March | 10 | 12 | 14 | 12 | 12 |
| April | 14 | 13 | 14 | 14 | 14 |
| May | 16 | 12 | 16 | 16 | 12 |
| June | 20 | 14 | 18 | 18 | 12 |
| July | 24 | 26 | 20 | 24 | 18 |
| August | 28 | 42 | 24 | 28 | 12 |
| September | 32 | 38 | 14 | 46 | 12 |
| October | 42 | 12 | 22 | 42 | 10 |
| November | 40 | 8 | 20 | 36 | 18 |
| December | 42 | 9 | 12 | 14 | 16 |

2. Food and Cover

Food production in the refuge marshes and swamp has been excellent this year. This is usually the case, since these areas do not depend on precipitation for moisture, but instead are periodically flooded by the rise and fall of river tides. Such crops as wild rice, millet, the various smartweeds respond very favorably to this situation.

There are two marsh units on the refuge, and both provide excellent food. The east marsh is composed mainly of pickeralweed (pontederis cordata), smartweeds (polygonum spp.), wildrice (zizania aquatica), spikerush (eleocharia sp) and black-eyed susan. This marsh always receives excellent usage and this year was no exception. The main waterfowl species utilizing the east marsh were Canada geese, black ducks and pintails. The north marsh is composed of the same species of vegetation plus cattail (typha spp.), beggartick (bidens sp.), and some undesirable brush species such as willow and red maple. This is a higher marsh than the east marsh and the waterfowl need higher tides to utilize it fully. It generally receives heaviest usage late in the season, from December through March; with the principal species being Canada geese and black ducks. The geese also like to rest in the river channel just off the north marsh.

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The Presquille swamp comprises about 70% of the refuge area and is composed mainly of gum, ash, ironwood, sycamore, maple and some oaks. These species, particularly the black gum, produce very great amounts of seed which are well utilized by ducks. There are two main creeks entering the swamp (Deep Creek and Little Creek), and in these are found large numbers of mallards, blacks, and wood ducks. These species also use the smaller open areas of the swamp. They do not feed much on the cultivated refuge crops; the exception being during periods of very cold weather when the swamp creeks are frozen over. In December there were several evenings when large numbers of mallards and blacks came to feed in the fields.

Cultivated crops produced excellent yields this year. There are 239 acres in cultivation and the crops are mainly corn, wheat browse, buckwheat, ryegrass and clover. Canada geese are the main users of the refuge farmland and everyday from October to April some geese can be seen on the fields. When they migrated north in April they had cleaned up all the corn and wheat browse. From the time the geese returned this fall until about the last week in November they rested on the river channel but only sporadically fed in the fields; preferring to feed at Curles Neck farm west of the refuge or at other locations. From then until the end of the year, however, they fed heavily on the refuge. Of course this refuge buildup also was associated with hunting starting in the local area. Our small population of blue and snow geese also liked to feed in the fields right along with the Canadas.

II. WILDLIFE

A. Migratory Birds

1. Canada Geese As 1969 began there were 10,000 geese on the refuge. They remained in about the same number through February and then dropped off to about 3500 early in March. A small buildup to 5000 occurred in the middle of March and lasted about a week. They then rapidly began to depart and all were gone by April 12. This fall the first geese seen were 50 on September 28. This is about a week later than the average. Numbers of Canadas built up slowly this year in comparison to other recent years; there were only 8,000 on December 11 compared to 9,500 the previous year. In the next week they increased dramatically to a new refuge record of 11,500 on December 18. This population has remained about the same and at the end of the year totaled 10,000.

The geese appeared to have changed their feeding patterns this year from last. Whereas last year they spent practically all their time on refuge farmland; this year they used the refuge crops very

little until late in November. Then they used it heavily in December. No complaints have been heard from area hunters regarding goose hunting, which is quite a contrast to last year. One possibility which probably influenced the geese actions a great deal was that hunting on Curles Neck Farm did not begin until very late this year. They take more geese at Curles Neck than at any other location around here. Thus the geese preferred using the Curles Neck marsh and fields until shooting began; whence they moved back to the refuge.

2. Blue geese and snow geese. These species continued to increase at Presquile, although not very rapidly. The high for the year was 30 snows and 225 blues between November 2 and November 29. The snows and blues feed in the refuge fields right along with the Canadas similar to their habits at Blackwater and Mattamuskeet Refuges. This is in contrast to the habits of the snow goose at Back Bay which is invariably a marsh feeder. Those present at Presquile are probably the lesser phase of the snow goose.

3. Mallard. Mallards have been increasing at Presquile over the last several years. A new refuge record was set this fall on December 3 when 9,500 were counted. The previous high was 6,500 and occurred last year. Mallards prefer to stay in the refuge swamp area and evidently get plenty of food back there. They, like the other duck species, disperse quickly from the refuge after the hunting season closes, and begin to use marsh and swamp areas in other localities nearby.

4. Black Duck. Blacks were down in numbers a bit this year from last. The refuge high this year was 3,500 early in January compared to 3,600 the previous fall. In fall 1969 they never got above 3,200; this number being recorded early in December. Blacks are spread over much of the refuge habitat including the refuge swamp and north and east marshes. They form an important part of the hunters bag in areas surrounding the refuge.

5. Pintail. This species also forms a good portion of the local hunters bag but is not quite as prevalent on the refuge. They use the east marsh almost exclusively with small numbers occasionally seen in the swamp. In 1969 they increased slightly in numbers as 1100 were seen late in December compared to 500 in 1968, and close to 1,000 in previous years.

6. Wood Duck. A major species at Presquile, the wood duck is the only duck present in significant numbers in the summertime. Each year from 50 to 100 young wood ducks are produced and the potential for production is much higher than that. Most broods observed number quite low; 1-3 ducklings is the rule rather than the exception. We believe predatory turtles are the major limiting

factor on young woodies and plan to get hold of a good trapper to take them out next year. A total of 65 wood duck boxes conforming to FWS specifications have been erected in the refuge marshes and swamp but have never been used in the three years they have been up. It is possible that enough natural cavities are present to allow nesting for all the wood ducks present (150).

The winter populations of wood ducks are usually quite high at Presquile. The 1969 high of 2,000 did not quite match that of 1968 which was 2,500. They are found mostly in the swamp with a few at the edges of both marsh units.

7. Other Dabblers. Some blue winged teal pass through during September and early October with a high this year of 50 on October 1. They are not usually seen during the spring migration. Greenwinged teal are usually present in very small numbers all winter. Their high this year was 60 in mid-October. American Widgeon are seen intermittently and never in large numbers; highest this year was 25 in January and again in December.

8. Diving ducks. There being no submergent vegetation in the James River, divers never remain at the refuge long; but a surprising variety stop in small numbers during migration. About 100 ringnecks were seen off the north end of the island late in November; 100 lesser scaup were seen in the same area in late October; and ten canvasback were spotted in the east river channel on December 3. Ruddys and bufflehead are seen frequently in small numbers as well as hooded and common mergansers.

9. Other species. A real rarity for Presquile was the sight of 6 whistling swan on December 3 and another 2 on December 22 while making the annual Christmas Bird Count.

Considering all duck species together, a new refuge record total was set the week of November 30 to December 6 when 15,700 ducks were counted. The previous high count had been 12,305 in January 1969.

10. Doves. Dove populations were very low early in the year and remained that way until about June. They then built up to about 400 in July and August, and during this time we banded 246 of them. After September doves again decreased and at the end of the year about 50 were using the refuge. The summer buildup was greater than that of the past several years and we contributed to it by having about 10 acres of wheat that had grown up and not been harvested. It had been planned to use this for seed wheat but production was too low to justify picking it - so it remained for the doves.

11. Other migratory birds. Larger numbers of American egret were seen in late summer this year and quite a few stayed until very late in the fall. Great blue herons were also abundant throughout the year.

B. Upland Game Birds

1. Bob-white quail. Quail were more prevalent this year than last. Refuge populations at the end of the year numbered about 50 in three large coveys. They learn to fly back and forth over the ship channel to the adjacent farmland. I believe most of the time the refuge is the place where they nest and then when the young get large enough some of them fly off each year. Almost every time you see a covey cross the river they are flying off the refuge rather than back on.

2. Turkey. Turkey numbers were very high all year. In the spring and summer they are seen frequently in the agricultural fields. Later on when the swamp trees have produced their mast they are seen only back there. One brood of 4 young was seen in late June and at the end of the year the refuge was hosting at least 25 turkeys. Refuge visitors are always thrilled if they can get to see the turkeys while making their tours.

3. Pheasant. These birds probably came to the refuge from across the river at Curles Neck Farm where they raise them for hunting purposes. No more than 2 are present at this time.

C. Big Game Animals The white-tailed deer is our only big game animal, but he makes up for it by sheer force of numbers. At the beginning of 1969 there were an estimated 100 using the refuge. After fawning this rose to 150. Bow hunters removed 19 (12 harvested, 4 found dead and 3 estimated mortally wounded) and also chased many more off the island. After the state hunting season opened off the refuge, most of the deer returned and brought a friend with them. Late in December counts after dark revealed at least 150 deer on the refuge again. The deer did not damage the refuge corn crop as much this year. Previous estimates had been that they destroyed 20% of the crop, but this year 5% would be closer to the figure.

Although the refuge deer herd is much too large for the refuge habitat (1 deer per 9 acres), they have remained disease-free. The deer taken by the bow hunters were all fat and stomach samples taken from them disclosed that almost all their food came from crop species. This included corn, wheat, fescue, buckwheat and clover. The bow hunt provides a lot of recreation for the participants and we would like to keep a good size herd; but we feel that we should try new hunting regulations that will allow us

to level the herd off below 100 animals.

D. Fur Animals, Predators, Rodents and Other Mammals

Raccoons have reached a population of around 170, which is higher than we would desire. They have only given us trouble so far around the duck banding traps back in the swamp and are not numerous enough now to warrant control measures.

The striped skunk has increased in numbers in the past year. In April we estimated a population of 20 skunks but at the end of the year there were at least 30. This is a high number for their limited habitat of around 300 acres. Sometimes skunks seem more numerous than they are because of their penchant for hanging around refuge buildings. Three were seen at one time in December within one hundred yards of headquarters.

Opossum are at a relatively low level on the refuge; we estimate there to be 15.

Groundhogs are present in moderate (50) numbers. At one time they were a serious pest in the refuge farm areas and were very numerous. A control program was initiated about five years ago with good success and now we follow up on this by occasionally shooting them while we are on other routine duties.

The red fox is present in the form of one family that produces a litter of young every year in a groundhog hole in the north end of field #3. The young evidently leave the island very quickly because there has never been any buildup in the fox population. No grey fox are present on the refuge although this species is found on the farmlands and woodlots just off the island.

Cottontail rabbits are present but their population remains quite low. This is probably due to our relatively large concentration of various predators (fox, hawks, owls etc.), because off the refuge their numbers are quite high. A good estimate of the refuge total would be about 20.

Grey squirrels are quite numerous and appear to have increased slightly during the last year. They use the refuge swamp as well as the farmlands and edges (about 800 acres) and number about 200. Probably the biggest competitor for the refuge corn besides the geese and deer is the grey squirrel.

Weasel are present on the refuge but are very secretive and seldom seen; in fact none have been seen this year.

Muskrats are at a low population level on the refuge. We make a house count in the fall along lines of our vegetative transects and expand the data to include the entire refuge marsh. A figure then must be added to account for muskrats that live in the swamp banks. Our entire muskrat population is now about 200 on a total habitat of 600 acres.

A family of beavers lives in a lake on Doggan Farm which is just across the east river channel from the refuge. They occasionally visit us as can be seen by tree cuttings in the eastern portion of our swamp. Two were seen by Technician McFarland and Maintenance man Vick on January 29.

Otter and mink are also present but neither species has been seen this year although otter sign was evident in the swamp.

E. Hawks, Eagles, Owls, Crows, etc.

One adult bald eagle was seen frequently in the spring; and two immature eagles have been seen several times this fall. In the past the refuge would host a half dozen, so it appears the eagle has declined in this area as it has elsewhere. No nests are known to be in the vicinity of Presquile.

Red-tailed and red-shouldered hawks are Presquile's most common; but some sharp-shinned, marsh, and sparrow hawks were also seen. Some of them are problems around our duck and dove banding traps, but we try to work our banding in around them since they are probably in worse shape nation-wide than waterfowl populations are.

Another prevalent predator in our refuge swamp is the barred owl. They are heard all summer from headquarters in the evening and are occasionally seen on dark days while riding in the boat up the swamp creeks. Other owls present are the screech owl and great horned owl but no observations of these species have been made this year.

One or two ospreys were seen on the refuge during the spring and summer; a low number for the area. We know of no nests in this immediate vicinity.

Crows are common on the refuge; both the common and the fish crow. They are never exceptionally abundant and usually number 25 to 50. No roosts or nesting areas are known to be near the refuge.

F. Other Birds

Pileated woodpeckers are usually quite abundant in the swamp but there appeared to be fewer this year.

An interesting species is the bank swallow. They have a large colony in the steep clay banks bordering the ship channel. This colony is the only one known within a 100 mile radius of the refuge.

Several evening grosbeaks were seen in January; they are on the refuge birdlist as a rare winter visitor.

G. Fish

All of the proclamation river water surrounding the island is open to fishing. There are fair numbers of catfish, carp, striped bass, and white perch in the river at certain seasons, but the local people claim the fish do not taste good because of the river pollution. Nevertheless, during the summer quite a few people fish for catfish near the ferry landing on the mainland side. Also commercial fishermen run gill nets in the river and get a fair price for their catch. We have begun to keep records or estimates of how many people fish the river for our public use reports.

H. Reptiles

Some reptiles are quite numerous on Presquile. In fact, the major limiting factor on wood duck production is believed to be predation on the young by yellow-bellied and snapping turtles. We plan to get a good trapper next year to try and remove most of them from our swamp creeks. There have been trappers in the past but they did not put much effort into removing the turtles.

The most numerous snake on the refuge is the common water snake. The cottonmouth moccasin is also supposed to be found in the swamp, but the population must be very low because we haven't seen any all year.

I. Disease

None evident.

III. REFUGE DEVELOPMENT AND MAINTENANCE

A. Physical Development

For a small refuge with a small staff, Presquile accomplishes quite a lot in terms of wildlife management. Farming of 239 acres is accomplished entirely by the refuge staff; thousands of waterfowl and doves are banded annually; and major maintenance work is performed on farm equipment, ferry system, vehicles, buildings and roads. The following is a list of the major maintenance and rehabilitation projects.

1. Ferry system Presquile Refuge is reached only by a cable operated ferry run by the refuge personnel. This year the James River Flood in August put the ferry out of commission for a week and caused about \$2,658.00 worth of damage. A barge got loose upriver and came at a high speed; hitting into the ferry while it was anchored at the island side. The ferry ramp was torn off from the shore, a cluster of five creosote pilings were snapped off, and the 3/4" cable was cut. We put the ramp back on shore and anchored it more firmly by putting concrete "dead men" back six feet from the ramp and four feet deep and cabling the ramp to these. We replaced the cable and contracted the rest; which consisted of a barge with crane to replace the pilings and a backhoe to dig river mud out of the ferry slips so that we could get in and out. Other work done on the ferry during the year included replacing the bull-wheel and rollers twice and the cable twice. Normally a 700' piece of cable will last about 6 months before it needs to be replaced. Also using refuge equipment we cleaned the loose river mud out of the ferry slips several times.

2. Roads and trails The access road to the refuge through Presque Isle Farm and the road from the ferry to headquarters on the island were graded twice and had burnt motor oil spread on them as we have found that this hardens them and they require grading less frequently.

3. Agricultural equipment New roll bars were installed on all refuge tractors and also on our bulldozer. A rock guard was put on the Case tractor since that is the one we always mow with.

4. Buildings and facilities A portion of new submarine cable was spliced on the electric line that runs under the river from Shirley to the east side of the refuge and headquarters. A lightning storm in June ruined the sections that had to be replaced.

A new submersible pump was installed in the refuge well after lightning ruined the old one.

Several rooms in Quarters #44 and the roofs of the shop, service building, garage, oil house, and pump house were painted.

A new garbage pit was established on the southeast corner of the island and the old unsightly dumpings on the river bank were partially covered up.

The doors on the old dairy barn were repaired and made to operate properly.

5. Banding facilities We constructed a new cannon net site on the east side of the island in the old spoils area and adjacent

to the east marsh. After clearing enough trees and brush out we leveled the site off and purchased and spread the area with seven tons of fine gravel. We will have to wait now and see if we can successfully band geese there like we think we can. The two large wire duck traps at the end of the swamp creeks were repaired with new posts and wire where needed; and will be used this year because we feel we can better meet our quotas with these than with the smaller portable type traps that were used last year.

6. Miscellaneous

a. Several days were spent cleaning fallen trees out of our two major swamp creeks. Our prime banding areas are at the ends of these creeks and they must be navigable. For this job we utilize a portable winch which attaches to an ordinary chain saw motor.

b. New sides and tail gate were built for our IH dump truck.

c. A small pen was built near headquarters for holding young wood ducks which had been imprinted to nest boxes. (see section V "Field Investigation and Applied Research").

7. Equipment purchases

The following equipment was purchased during the year.

a. Two portable Motorola radios for use in law enforcement work and other duties. Prior to this we had no way of contacting from headquarters to a man who was out in the boat, back in the swamp or any where else on the refuge. These units will be the start of a refuge communications system; and as funds become available, mobile units and a base set will be purchased.

b. A Ferguson spike tooth harrow.

c. A Black and Decker circular saw and bench grinder.

d. A Stanley drill press.

e. Four new tires for the 1964 Dodge pickup truck.

f. An exhaust fan for the shop.

g. Roll guards and canopies for all three of our farm tractors.

B. Plantings.

1. Aquatics and Marsh Plants

None.

2. Trees and Shrubs

None.

3. Upland Herbaceous Plants

None.

4. Cultivated Crops

Corn - 56 acres

Wheat- 66 acres

Buckwheat overseeded with ryegrass - 20 acres.

Presquile Refuge's farming program followed the same general pattern this year as it has for several years. We feel we have a well managed farm but are always looking for ways to improve. All cultivated land is planted in alternating strips of corn and wheat with the exception of 2 narrow strips (10 acres) in the corn fields that are planted to buckwheat and ryegrass, and field #8A which was planted in buckwheat this year after several years of wheat. This field had been used for the wheat which was to be harvested for the next year's seed. It will now be put into the regular rotation and seed wheat will be harvested from a different field each year. The buckwheat strips in the corn fields make a more attractive place for geese to come in and land than if the field were solid corn.

As was the case in 1968, all corn and wheat land (fields 2 and 5) was plowed this year. Soybeans were planted in fields 2b, 2d, 5x and 5z and plowed under in July as green manure. These fields were planted to winter wheat in September. All the refuge fields have now had green manure treatment in the last two years. This practice should be done often to increase the organic matter in the soil.

No lime was spread this year because of fund limitations. Fields #2B and #2D need lime badly and this will be applied in 1970 if at all possible.

Fertilizer and chemical treatments of croplands during 1969 were as follows:

Corn land - 400 lbs/acre of 6-12-24 after plowing and disking. After germination we applied 80 lbs/acre Nitrogen along with 2 lbs/acre Atrazine for weed control.

Soybeans (green manure) - 50 lbs/acre Nitrogen at time of planting.

Wheat - 500 lbs./acre of 10-5-8 after soybeans were plowed under and land disced.

Buckwheat and ryegrass - same fertilizer as corn but no nitrogen or atrazine applied.

Production was generally good for all crops. The only exception was the 10 acres of wheat planted for seed in field #8a. There wasn't enough to warrant harvesting, so seed wheat was purchased in the fall of this year. Dry weather in early spring contributed to the poor seed wheat crop.

Corn produced very well; an average of 100 bushels per acre. Losses to deer this year were considerably less than normal. About 5% of the corn crop was taken by deer this year compared to about 20% last year. Squirrels also get their healthy share of corn. Three varieties of corn were planted and there was little to choose from between them as far as yield was concerned. Pioneer 345 corn was planted in fields 5w and 5y; Golden Acres Growmaster in fields 2a; and DeKalb XL-45 in field 2c. The Dekalb XL-45 has a lower ear than the other two varieties and the geese seem to take it first.

Wheat browse this fall has been excellent. Whereas fields are usually browsed almost bare at this time of year; we now have plenty left for the geese. Very little difference in usage of the fields has been noted this year compared to last. A comparatively early planting (all wheat was planted by September 16) and the green manure program seemed to benefit this crop.

Buckwheat usually feeds mostly deer at Presquile. This year there was much less deer usage and more left for the geese. Buckwheat and ryegrass were planted around August 19 and the buckwheat had passed the best stage when the geese arrived. They still cleaned it all up, however, by mid November. Next year we will try planting it about August 30.

Fescue and clover pasture comprises 93 acres at Presquile. This pasture serves mostly in preventing erosion. Fescue has crowded most all of the clover out of these pastures and it is doubtful whether it is worth re-inoculating with clover every few years. Besides its erosion preventing function, the fescue also serves as a "buffer" between the refuge deer and the corn crop. The fescue grew very well all season this year.

A pure stand of ladino clover is in field #4. This clover has been excellent all year; however, as of this date the geese have not devoured it like they usually do.

C. Collections and Receipts

Corn, wheat, buckwheat, ryegrass and soybean seed was purchased this year for planting in refuge fields.

A local farmer picked 300 bushels of corn for us in October for our use in banding operations. This corn was picked from field #2a and stored in our grain bin in the old dairy barn.

D. Control of Vegetation

In the corn fields weeds were controlled by the application of 2 lbs. of Atrazine (80%) per acre. This was mixed in with the nitrogen and applied at corn germination time. The main target species was Jimson weed; which grows exceptionally robust at Presquile. The atrazine application resulted in 95% control of all corn field weeds and we were very well pleased with this manner of treatment. We did cultivate one time but mainly to break up the hard packed soil.

Spot infestations of Johnson grass were treated in most of the refuge fields and along the deer fence. Treatment was both chemical with Dalapon (5 lbs. a.e./acre) and mechanical by discing. Some areas were both sprayed and disced and this is where we got the best control; about 90%.

E. Planned Burning

A prescribed burning plan was submitted to the regional office and approved this year. It calls for burning our marshes on a two year cycle as early in the winter as conditions will permit. So far this fall conditions have not been right, but any time now we will be attempting to burn the north marsh. Results will be discussed in next years narrative.

F. Fire

None.

IV. RESOURCE MANAGEMENT

A. Grazing

None.

B. Haying

None.

C. Fur Harvest

None.

D. Timber Harvest

None.

E. Commercial Fishing

There is moderate use by several fishermen in the James River proclamation waters surrounding the island. They use traps and trot lines and appear to catch mostly catfish and perch. I have heard that they get a pretty good price for their fish at New York and Chicago markets, however most people around here claim that the fish develop an "off" taste from the polluted waters.

F. Other Uses

None.

V. FIELD INVESTIGATION AND APPLIED RESEARCH

A. Banding

The following table shows results of our banding program in 1969.

| <u>Species</u> | <u>Quota</u> | <u>Banded 1969</u> |
|----------------|--------------------------|--------------------|
| Canada Goose | as can | 264 |
| Mallard | 500 | 309 |
| Black | 600 | 167 |
| Pintail | - | 1 |
| Wood duck | 200 | <u>5</u> |
| | Total waterfowl banded | 746 |
| Doves | 200 | <u>248</u> |
| | Total all species banded | 994 |

All waterfowl were banded in the post hunting season period. Two doves were banded post season and the rest in July and August.

This year duck trapping was limited to the use of small, portable, funnel type traps. This fall, however, we spent a couple of days repairing the two large traps at the ends of our major swamp creeks, and these will be used during the 1970 post season banding. We feel that we can do a better job with these large traps operating.

Dove banding was helped by the fact that we left unharvested some 10 acres of wheat that had not produced enough to justify picking. This drew the doves to the area and gave us a population of 400-500 during the July and August banding period. This was the largest number of doves banded in quite a few years. We used about 20 traps in this operation and cracked corn for bait.

B. Vegetative Transects

During 1969 two transect lines were established; one in the north marsh and one in the east marsh, for the purpose of inventory of our plant species as well as to set up a basis for measuring year after year the results of management practices such as prescribed burning.

One line was run this year (north marsh) in early October, with the assistance of the East Coast area biologist. A five point sampling technique was used; and all species of vegetation within one inch of the points after the sampler was placed in the marsh were recorded. Samples were taken every ten paces and covered about 2/3 of the length of the marsh (see map this section). In next years narrative the results will be listed and analyzed. Also we hope to run the transect in the east marsh; it was planned to run both this year but we found that in October the vegetation had grown too high in the east marsh to sight from one transect stake to the next, so we will replace them with longer stakes for next year.

C. Wood Duck Nest Boxes

A total of 65 artificial nest boxes for wood duck have been erected in the refuge swamp and marshes. Twenty five were set up in 1967 and the remainder in 1968. There has never been any use of these boxes although we have a breeding population of 150 or more woodies and several broods are seen each year. All boxes were checked this year in October and November and again there was no wood duck usage. The boxes appear to be in excellent locations and conform strictly to FWS specifications. My best estimate is that we probably have sufficient natural nesting cavities in the swamp and that the birds prefer them. One more thing to try would be the release of imprinted wood ducks and this was tried on a very small scale this year. A wire pen was built at

PRESQUILE NATIONAL WILDLIFE REFUGE

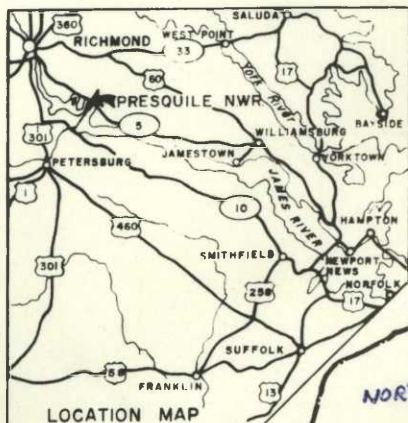
CHESTERFIELD COUNTY, VIRGINIA

UNITED STATES
DEPARTMENT OF THE INTERIOR
77°17'

77°16'

77°15'

FISH AND WILDLIFE SERVICE
BUREAU OF SPORT FISHERIES AND WILDLIFE
77°14'



SCALE: 1" = APPROX. 32 MILES

SECRETARY OF INTERIOR
CLOSING ORDER BOUNDARY
DATED 8/13/54

LEGEND

REFUGE BOUNDARY

VEGETATIVE TRANSECT
LOCATIONS

MARSH

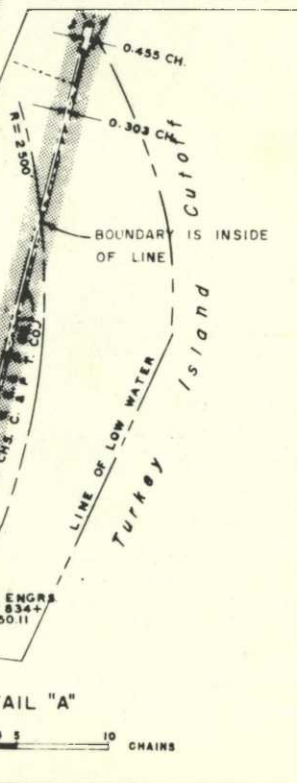
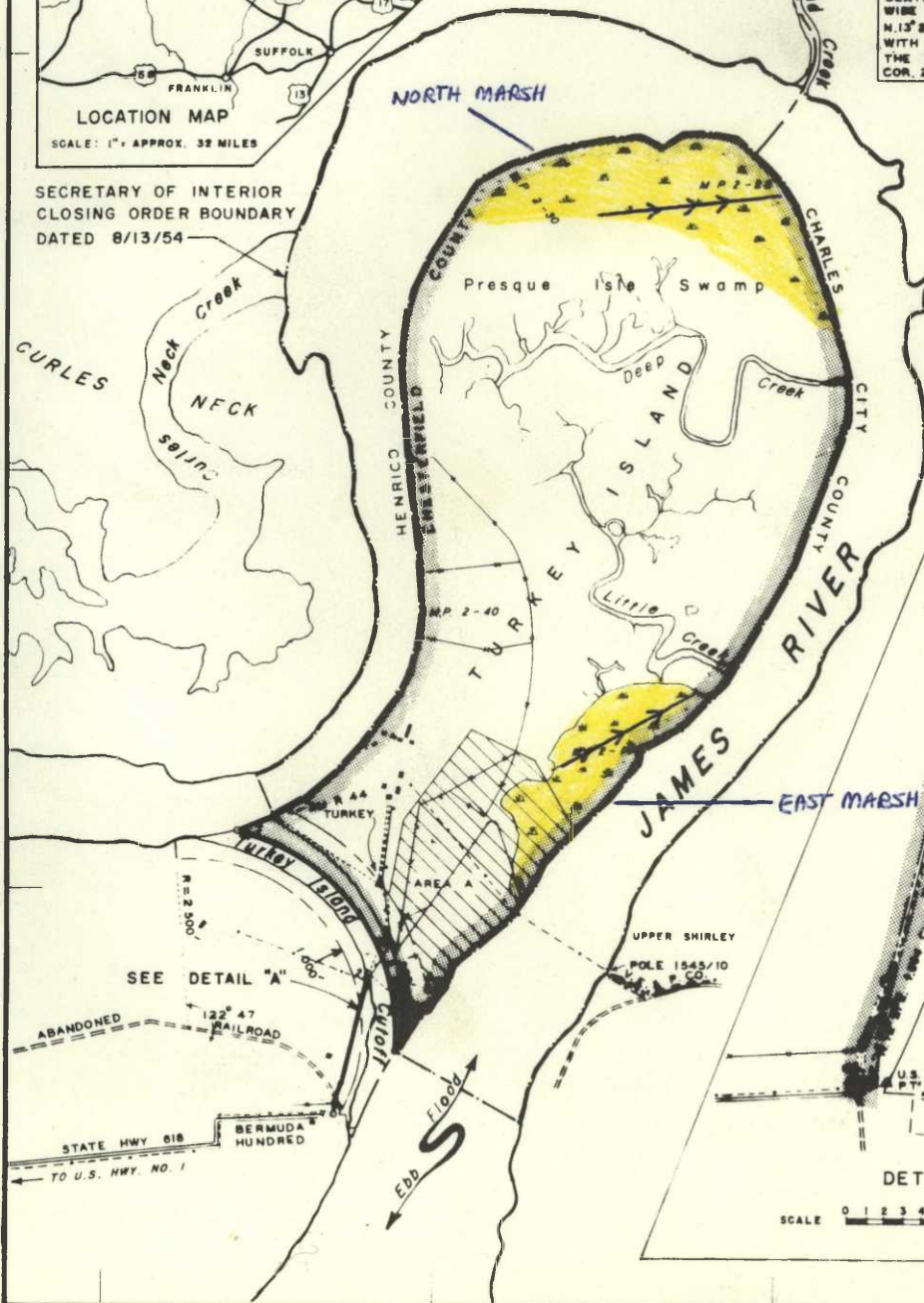
DESCRIPTION

TRACT (4) BEG. AT COR. 1, THE INTERSECTION OF LINE OF LOW WATER OF JAMES RIVER WITH CENTER LINE OF 1,800 FT. RIGHT OF WAY FOR TURKEY ISLAND CUTOFF; THENCE WITH SAID CENTER LINE ALONG A CURVE TO THE RIGHT FOR 86.08 CHS. TO COR. 2; THENCE WITH LINE OF LOW WATER UP STREAM AND ALONG THE RIGHT SHORE OF THE JAMES RIVER 488.48 CHS. TO THE P.O.B.

TRACT (4B) BEG. AT COR. 1, THENCE WITH CENTER LINE OF STRIP OF LAND 0.303 CH. WIDE N. 2° 25' E. 2.339 CHS., N. 20° 30' E. 5.02 CHS., N. 13° 35' E. 24.80 CHS., N. 13° 35' E. CONTINUING WITH SAID CENTER LINE BUT INCREASING THE WIDTH TO 8.488 CH., 1.50 CHS. ± TO COR. 2, IN LINE OF LOW WATER.

NOTE THE TWO (2) TRACTS ARE COVERED BY PATENTS GRANTED BY THE COLONY OF VIRGINIA.

NOTE: THE UNITED STATES HAS PERPETUAL RIGHTS AND EASEMENTS TO EXCAVATE CUT AWAY AND REMOVE THOSE PARTS OF TRS. (4, 4B) WITHIN THE 1,000 FT. R/W FOR TURKEY ISLAND CUTOFF, AND ALSO TO DEPOSIT WITH CERTAIN LIMITATIONS DREDGING MATERIALS WITHIN THAT PART OF TR. (4) IDENTIFIED THUS



SCALE 0 1 2 3 4 5 10 CHAINS

COMPILED IN THE BRANCH OF REALTY
FROM SURVEYS BY B.S.F.W.

ATLANTA, GEORGIA AUGUST, 1965

Scale 0 20 40 60 80 CHAINS
0 1/4 1/2 3/4 1 MILE

8-1/2°
TRUE NORTH
MAGNETIC N

MEAN
DECLINATION
1965

4R-VA-451-403

headquarters and fourteen young woodies that had been imprinted to nesting boxes at the Curles Neck Farm were placed in the pen in February. They were released in April after some started to die. I believe this is a program that should be tried on a greater scale and using slightly different techniques. The young ducks should be placed in a suitable pen around July and held there until immediately after the hunting season ends, and then released. That would correspond better to their nesting season and probably would bring success. If funds and young ducks are available perhaps we can attempt such a program in 1970.

VI. PUBLIC RELATIONS

A. Recreational Use

There is little in the way of facilities for visitors at present. We have four picnic tables and a charcoal grill located in a large grove of trees near headquarters where the old mansion used to be. Visitors enjoy picnicking in this beautiful spot during their trips to the refuge. We need at least four more tables and several more grills at this area; running water is available but restroom facilities are located in our shop building which is a good ways from the picnic grove. Other picnic areas are included in long range plans for the southeast corner of the island and also near the mainland ferry landing. Also some type of interpretive display is needed at the ferry on the mainland side; and we will work on this during the coming year.

Quite a few tours of the refuge are provided for the public during the year; and they usually are on the weekend. Usually they are organized groups such as scouts or church and civic organizations. Occasionally however, single families or lone birdwatchers will be taken to the island if we can possibly work it in with our schedule. Tours of the cropland area are provided for organizations that want them; we try to show them the results of management efforts and to show them what wildlife we can. Usually they are not disappointed, because even during the time that the large numbers of waterfowl are not present; visitors can see deer, turkeys, woodchuck, squirrels, hawks etc. and this frequently means just as much to them as seeing the ducks and geese.

Our bow hunt in the fall also provides quite a bit of good recreation for area archers. This year 229 hunters hunted on 397 days and took home 12 deer. The number of deer taken sounds low; but when you consider that just about everyone claimed to get at least 2 or 3 shots, it appears that everyone had a good time.

B. Refuge Visitors

Total visitors increased this year from 885 in 1968 to 1188. Organized groups and official visitors are as follows:

| <u>Date</u> | <u>Name</u> | <u>Where from</u> | <u>Purpose</u> |
|-------------|---|-------------------|-------------------------------------|
| 01-18-69 | 36 members of Virginia Society of Ornithology | Statewide | Birdwatching |
| 02-01-69 | 6 Cub Scouts | Richmond, Va. | Tour, banding demonstration, picnic |
| 02-06-69 | J.H. Barney, U.S. Commissioner | Petersburg, Va. | Tour |
| 02-06-69 | Don Daniel, USGMA | Williamsburg, VA. | Law enforcement |
| 02-20-69 | Otto Florschutz, Area Biologist | Washington, N.C. | Deer food analysis |
| 03-19-69 | " " | " " | Wildlife inventory plans |
| 03-22-69 | 9 members of Chester Jr. Women's League | Chester, Va. | Tour, picnic |
| 03-22-69 | 77 Cub Scouts and leaders | Chester, Va. | Tour, picnic |
| 05-10-69 | 9 Cub Scouts, 29 Girl Scouts, 9 Y Indian Guides | Petersburg, Va. | Wildlife observation, picnic |
| 05-15-69 | Ed Folsom, Asst. Mgr. Chincoteague NWR | Chincoteague, VA | Visit |
| 05-17-69 | 35 Girl Scouts and Brownies | Richmond, Va. | Tour, picnic |
| 05-30-69 | Gail Monson, Washington Office BSF&W | Washington, D.C. | Visit |
| 06-09-69 | Paul D. Daly, Asst. Mgr. Back Bay NWR | Virginia Beach | Orientation tour |
| 06-20-69 | 24 Cub Scouts Pack 176 | Chester, Va. | Tour, picnic |

| | | | |
|----------------------------|--|----------------------------|----------------------------------|
| 08-08-69 | 16 members Entomology class, Va. Commonwealth University | Richmond, Va. | Field trip |
| 08-11-69 | Otto Florschutz, Area Biologist | Washington, N.C. | Wildlife Inventory plans |
| 09-30-69 | " " " " " | " | Vegetative transects |
| 10-03-69 | Walter Stieglitz, Regional office | Atlanta, Ga. | Comprehensive inspection |
| 10-03-69 | Conley Moffit, Regional office | " " | Orientation tour |
| 10-14-69 | Robert Gilmore, Refuge Mgr. Back Bay NWR | Virginia Beach | Visit |
| 10-16-69 to 11-04-69 | 397 Bow hunters | Va. Md. N.J. Wash. D.C. | Hunting |
| 10-16-69 | Max Ailor, Richmond Times Dispatch | Richmond | Story on deer hunt |
| 10-16-69 | Joe Bellamy, State Game Warden | Chesterfield County, Va. | Assist on deer hunt |
| 10-19-69 | Charles Meacham, Commissioner of USFWS | Washington, D.C. | Orientation tour |
| 10-28-69 | Otto Florschutz, Area Biologist | Washington, N.C. | Assist on deer hunt |
| 11-02-69 | John E. Longmire, Ass't Executive Secretary Chesterfield Co. Va. | Chester, Va. | Visit |
| 11-19-69 | Harold Muddiman, Petersburg Progress Index | Petersburg, Va. | Story on refuge |
| 11-22-69 | 64 Girl Scouts and leaders | Chester, Va. | Wildlife observation, picnic |
| 11-29-69 | 54 Cub Scouts and leaders | Richmond, Va. | tour, animal track casts, picnic |

| | | | |
|----------|--|---------------|--------------------------|
| 12-06-69 | 17 Girl Scouts and leaders | Richmond, Va. | Tour, picnic |
| 12-16-69 | Walter Stieglitz, Regional Office | Atlanta, Ga. | General inspection |
| 12-22-69 | David Roszell, VSO | Richmond, Va. | Christmas Bird Count |
| 12-22-69 | Miss Ann Robertson, Richmond News Leader | Richmond, Va. | Story on Christmas Count |

C. Refuge Participation

| <u>Date</u> | <u>Program</u> |
|-------------|--|
| 01-16-69 | Manager Fields visited Carter G. Woodson Jr. High School and presented them a copy of "Waterfowl Tomorrow" for the school library. |
| 02-18-69 | Fields showed movie "Wildlife Babies" to 50 Cub Scouts and 30 parents at the Chester Community Center. |
| 02-25-69 | Fields showed movie "Wildlife Babies" to the Hopewell Rotary Club. |
| 04-10-69 | Information display on the refuge, banding, and flyways put up in Cavalier Mall, Hopewell. |
| 07-21-69 | Manager Daly attended a meeting of the Virginia Conservation Education Advisory Board in Charlottesville, Va. |
| 08-13-69 | Daly attended a meeting of the Chesterfield County Board of Supervisors relating to industrial zoning of lands adjacent to the refuge. |

Again this year all area newspapers covered the refuge bow hunt in some fashion. The articles were generally well written and Presquille gained a good amount of favorable publicity.

D. Hunting

Bow hunting for white-tailed deer is the only hunting permitted on the refuge. We had 8 days of hunting this year with a maximum of 75 hunters per day. Applications were sent to us prior to the hunt and preferred dates were assigned by a drawing on September 26. Hunt dates were October 16, 17, 22, 23, 28 and 29 and November 3 and 4. Results were 12 deer checked out by 229

hunters on 397 hunter-days. Three additional deer were found dead after the hunt and four more were believed killed but never found. Thus we estimate that 19 deer were removed during the hunt. We had been hoping for a removal of about 50 deer so we fell far short of our goal. The nature of this island refuge is such that the deer swim readily on and off the island; so quite a few swam out during the hunt and came back again later when the state season opened off the refuge. On December 2 the manager counted 84 deer in the fields after dark. This is at least as many as we had prior to the hunt.

Factors limiting the size of the kill are many. For the first couple of days, when hunting chances are the best, many archers pass up quite a few shots at small deer and does in hopes of a big buck. When they don't get the buck they find it more difficult to get a deer at all after the animals become more cautious. A good 98% of the hunters will only hunt the cropland area and along the deer fence on the edge of the swamp. Naturally after the first day or so a large percentage of the deer retreat to the swamp interior. This year for the first time we offered to carry as many hunters as wanted to go, back into the swamp by boat. The few that took us up on our offer saw plenty of deer. We are still trying to manipulate the hunting regulations to enable the archers to take more deer and more modifications will be forthcoming before next years hunt.

Whatever the success of the hunt as far as deer herd management is concerned; it assuredly is very popular with area bow hunters and provides lots of recreation and good publicity for the refuge; for those facts alone it is worth while. Hunters this year came not only from Virginia, but from Maryland, New Jersey, and Washington, D.C. .

Waterfowl hunting off the refuge has been only fair this fall. Reports from various hunters indicate that duck and goose shooting overall may have been slightly better this year than last; but the last few years have been very poor. Goose shooting Opened November 10 and a few were shot on Presque Isle Farm across the channel from the refuge. Curles Neck Farm west of the island did not shoot geese until after duck season opened on November 22. Then they hunted fairly heavily with good success reported. Duck shooting in other places was good the first week or so of the season and then dropped off sharply until around the middle of December when it picked up with the arrival of some bad weather. Blacks, pintails, wood ducks and mallards seem to make up the largest proportion of the hunters bag in this area.

I think that a goose and duck kill survey should be conducted one season near the refuge to determine about how many waterfowl

actually are taken. It is difficult to make a good estimate solely from hunters reports, since they sometimes vary by a country mile.

E. Violations

No cases were made this year by refuge personnel. This area seems to have hunters who for the most part respect the refuge and would not commit violations on it. Beside, the creeks and marshes are very hard to get into because of tides, mud flats, submerged logs and stumps etc., and somebody has to want a duck awful bad to enter the refuge swamp to try and get one, knowing he may not get back out that same day.

A minor problem arose on December 3 when the manager got a call about 6:30 P.M. from one of the state game wardens saying that a boat was stuck on a mud flat on the refuge. Upon investigating it was a boatload of 4 young men who had been drinking heavily and ran their new boat aground and couldn't get the motor started when the tide came back in. It was about 20° and the men had been there about three hours when found. They were not dressed for the cold except for the antifreeze in their veins, and were quite grateful when they were towed to shore. Of course, even though this incident ended in a harmless fashion, the potential for a real tragedy was present.

F. Safety

We try to have at least one formal safety meeting per month even though our staff size is limited. Informal safety discussions are held quite frequently. One intermittent laborer was on duty from about the middle of July to December and we always made sure he had adequate safety instruction before undertaking any task. Presquile Refuge has never had a lost time accident since its activation in 1953 and we want to keep it that way.

Safety actions taken during 1969 were as follows:

1. New roll bars were installed on all three refuge farm tractors and our TD-9 bulldozer.
2. A rock guard was installed on the Case tractor since that is the one that is used for mowing.
3. New life rings were purchased for the ferry ramp on the mainland side and for the boathouse dock.
4. Six new life preservers were purchased and placed on the ferry. We intend to have one for each passenger that crosses on the ferry and if a group is too large

for the number of preservers that we have, then the ferry will make two trips across the channel.

VII. OTHER ITEMS

A. Items of Interest

1. Flood

Besides the damage caused to our ferry system as discussed under Section III A Physical Development; the August flood also produced the following:

- a. Loss of about 1/5 acre of good farm land on the extreme southwest corner of the island. This high river bank area was the only spot that did not have a growth of shrubby vegetation and the high, swift water undercut the bank enough to cause it to slide into the river. We will attempt to get vegetation growing on this area in the coming year since funds will probably not be available to do the best thing; i.e. slope the bank off and rip rap the shore.
- b. Minor damage to the refuge boathouse. For a while at the height of the flood it looked like we would lose the boathouse completely, but as it was there was no un-repairable damage.

2. Personnel

On June 11 Manager John Fields left Presquile to take over as Manager of Pungo NWR, Plymouth, N.C. John had been at Presquile since January 1966.

Paul D. Daly reported as new Presquile Manager on July 3; he came from Back Bay NWR, Virginia Beach, Virginia.

Raymond McFarland, Biological Technician, departed Presquile on July 28 to accept a position at Catahoula NWR, Jonesville, Louisiana. Raymond had been here since 1960 and we all wish him well in his new location.

The new manager moved into the house that Mr. McFarland had occupied; the only house on the refuge.

3. Presque Isle Farm Rezoning

During this summer Presque Isle Farm, which lies just across the ship channel from the refuge was rezoned from agricultural to industrial. Plans were to sell most of the property to one of Europe's largest firms where they would locate an assembly plant for huge turbines. Late in the year this deal fell through, however, and it appears that the land will be farmed for at least one more year. Because of the rezoning, however, it is only a matter of time before another industry locates on the area and we will have lost another piece of land around here where our waterfowl would occasionally use. The refuge is becoming increasingly important, therefore, as a haven for area wildlife.

4. Early in September Manager Daly was initiated into the Optimist Club of Bermuda District, a civic organization that has the main goal of working with the youth of the community.

B. Photographs

See the following pages.

C. Credits

Text, NR forms by Daly; typing by Mrs. Lipchak; photo credits on following pages.

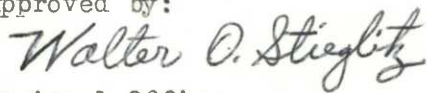
D. Signature

Submitted by:


Paul D. Daly
Refuge Manager

Dated January 16, 1970

Approved by:


Regional Office

Assistant Regional Supervisor

1-19-70

W A T E R F O W L

REFUGE Presquile NWR

MONTHS OF January TO April, 1969

| (1) Species | (2) Weeks of reporting period | | | | | | | | | |
|-------------------|----------------------------------|--------|---------|---------|----------|---------|----------|---------|----------|---------|
| | : 4 days | | | | | | | | | |
| | 12/29-1/4 | 1/5-11 | 1/12-18 | 1/19-25 | 1/26-2/1 | 2/2-2/8 | 2/9-2/15 | 2/16-22 | 2/23-3/1 | 3/2-3/8 |
| | : 1 | : 2 | : 3 | : 4 | : 5 | : 6 | : 7 | : 8 | : 9 | : 10 |
| Swans: | | | | | | | | | | |
| Whistling | | | | | | | | | | |
| Trumpeter | | | | | | | | | | |
| Geese: | | | | | | | | | | |
| Canada | 10,000 | 10,000 | 9,500 | 9,000 | 9,000 | 9,000 | 9,000 | 9,000 | 9,000 | 3,500 |
| Cackling | | | | | | | | | | |
| Brant | | | | | | | | | | |
| White-fronted | | | | | | | | | | |
| Snow | 25 | 20 | 20 | 20 | 20 | 20 | 15 | 20 | 20 | |
| Blue | 175 | 150 | 150 | 150 | 160 | 160 | 125 | 125 | 125 | |
| Other | | | | | | | | | | |
| Ducks: | | | | | | | | | | |
| Mallard | 6,000 | 6,000 | 5,000 | 2,000 | 350 | 850 | 400 | 300 | 250 | 150 |
| Black | 3,500 | 3,200 | 2,000 | 1,000 | 400 | 400 | 500 | 400 | 150 | 150 |
| Gadwall | | | | | | | | | | |
| Baldpate | | 10 | 10 | | | | | | | |
| Pintail | 500 | 800 | 500 | 100 | | 25 | | | | |
| Green-winged teal | 10 | 25 | | | | | | | | |
| Blue-winged teal | | | | | | | | | | |
| Cinnamon teal | | | | | | | | | | |
| Shoveler | | | | | | | | | | |
| Wood | 2,000 | 2,000 | 1,500 | 750 | 150 | 150 | 150 | 150 | 150 | 150 |
| Redhead | | | | | | | | | | |
| Ring-necked | | | | | | | | | | |
| Canvasback | | | | | | | | | | |
| Scaup | | | | | | | | | | |
| Goldeneye | | | | | | | | | | |
| Bufflehead | 10 | 10 | 15 | 10 | | 5 | | 5 | | |
| Ruddy | 10 | 10 | | | 10 | 10 | | | | |
| Other | | | | | | | | | | |
| H. Merganser | 10 | 25 | 25 | 25 | 15 | 5 | | | | |
| C. Merganser | | 125 | 125 | 50 | 75 | 25 | 25 | 20 | 20 | 25 |

3-1750a
Cont. NR-1
(Rev. March 1953)

WATERFOWL
(Continuation Sheet)

REFUGE Presquile NWR

MONTHS OF January TO April, 1969

| (1) Species | (2) Weeks of reporting period | | | | | | | | 4 : (3) days : Estimated | (4) Production |
|-------------------|----------------------------------|-----------------|-----------------|------------------|------------------|-----------------|-----------------|-----------------|-----------------------------|------------------------------------|
| | 3/9-15 : 11 | 3/16-22 : 12 | 3/23-29 : 13 | 3/30-4/4 : 14 | 4/4-6-12 : 15 | 4/13-19 : 16 | 4/20-26 : 17 | 4/27-30 : 18 | waterfowl : days use : | Broods : Estimated seen : total |
| Swans: | | | | | | | | | | |
| Whistling | | | | | | | | | | |
| Trumpeter | | | | | | | | | | |
| Geese: | | | | | | | | | | |
| Canada | 5,000 | 1,200 | 300 | 30 | 10 | | | | 24,780 | |
| Cackling | | | | | | | | | | |
| Brant | | | | | | | | | | |
| White-fronted | | | | | | | | | | |
| Snow | 10 | 5 | | | | | | | 1,290 | |
| Blue | 75 | 40 | | | | | | | 9,520 | |
| Other | | | | | | | | | | |
| Ducks: | | | | | | | | | | |
| Mallard | 150 | 50 | 40 | 30 | 25 | 15 | 10 | 10 | 133,380 | |
| Black | 150 | 75 | 60 | 40 | 30 | 25 | 20 | 10 | 74,240 | |
| Gadwall | | | | | | | | | | |
| Baldpate | | | | | | | | | 140 | |
| Pintail | | | | | | | | | 11,975 | |
| Green-winged teal | | | | | | | | | 215 | |
| Blue-winged teal | | | | | | | | | | |
| Cinnamon teal | | | | | | | | | | |
| Shoveler | | | | | | | | | | |
| Wood | 150 | 150 | 125 | 125 | 140 | 150 | 150 | 150 | 51,580 | |
| Redhead | | | | | | | | | | |
| Ring-necked | | | | | | | | | | |
| Canvasback | | | | | | | | | | |
| Scaup | | | | | | | | | | |
| Goldeneye | | | | | | | | | | |
| Bufflehead | | | | | | | | | 355 | |
| Ruddy | | | | | | | | | 250 | |
| Other | | | | | | | | | | |
| H. Merganser | | | | | | | | | 705 | |
| Coot: | 15 | 10 | 20 | 20 | 20 | 15 | 12 | 10 | 4,254 | |

(Over)

(5) (6) (7)
Total Days Use : Peak Number : Total Production

SUMMARY

| | | | | |
|-------|---------|--------|--|------------------------------|
| Swans | : | : | Principal feeding areas | Refuge fields and marshes by |
| Geese | 635,590 | 10,200 | geese and the swamps and marshes by ducks. | |
| Ducks | 277,094 | 12,205 | Principal nesting areas | |
| Coots | 0 | 0 | | |

Reported by John C. Fields

INSTRUCTIONS (See Secs. 7531 through 7534, Wildlife Refuges Field Manual)

- (1) Species In addition to the birds listed on form, other species occurring on refuge during the reporting period should be added in appropriate spaces. Special attention should be given to those species of local and national significance.
- (2) Weeks of Reporting Period: Estimated average refuge populations.
- (3) Estimated Waterfowl Days Use: Average weekly populations x number of days present for each species.
- (4) Production: Estimated number of young produced based on observations and actual counts on representative breeding areas. Brood counts should be made on two or more areas aggregating 10% of the breeding habitat. Estimates having no basis in fact should be omitted.
- (5) Total Days Use: A summary of data recorded under (3).
- (6) Peak Number: Maximum number of waterfowl present on refuge during any census of reporting period.
- (7) Total Production: A summary of data recorded under (4).

3-1750

Form NR-1

(Rev. March 1953)

WATERFOWL

REFUGE

Presquile NWR

MONTHS OF

May 1

TO August 31, 1969

1969

[illegible]

3-1750a
Cont. NR-1
(Rev. March 1953)

WATERFOWL
(Continuation Sheet)

REFUGE Presquille NWR

MONTHS OF May 1 TO August 31, 1969

| (1) Species | (2) Weeks of reporting period | | | | | | | | (3) 8 days | (4) Estimated : Production |
|-------------------|----------------------------------|---------|---------|----------|-------|---------|---------|---------|-------------------------|----------------------------------|
| | 7/6-12 | 7/13-19 | 7/20-26 | 7/27-8/2 | 8/3-9 | 8/10-16 | 8/17-23 | 8/24-31 | Waterfowl : days use | Broods : seen : total |
| Swans: | | | | | | | | | | |
| Whistling | | | | | | | | | | |
| Trumpeter | | | | | | | | | | |
| Geese: | | | | | | | | | | |
| Canada | | | | | | | | | | |
| Cackling | | | | | | | | | | |
| Brant | | | | | | | | | | |
| White-fronted | | | | | | | | | | |
| Snow | | | | | | | | | | |
| Blue | | | | | | | | | | |
| Other | | | | | | | | | | |
| Ducks: | | | | | | | | | | |
| Mallard | 5 | 5 | 5 | 6 | 6 | 10 | 10 | 18 | 839 | 0 |
| Black | 5 | 5 | 5 | 8 | 8 | 10 | 25 | 30 | 1,068 | 0 |
| Gadwall | | | | | | | | | | |
| Baldpate | | | | | | | | | | |
| Pintail | | | | | | | | | | |
| Green-winged teal | | | | | | | | | | |
| Blue-winged teal | | | | | | | | | | |
| Cinnamon teal | | | | | | | | | | |
| Shoveler | | | | | | | | | | |
| Wood | 150 | 125 | 125 | 100 | 100 | 100 | 150 | 200 | 17,450 | 20 |
| Redhead | | | | | | | | | | |
| Ring-necked | | | | | | | | | | |
| Canvasback | | | | | | | | | | |
| Scaup | | | | | | | | | | |
| Goldeneye | | | | | | | | | | |
| Bufflehead | | | | | | | | | | |
| Ruddy | | | | | | | | | | |
| Other | | | | | | | | | | |
| C. Merganser | | | | | | | | | 30 | |
| Coot: | | | | | | | | | | |

(Over)

(5) (6) (7)
Total Days Use : Peak Number : Total Production SUMMARY

| | | | | |
|-------|--------|-----|-------------------------|-------------------------|
| Swans | : | : | Principal feeding areas | Refuge marshes |
| Geese | : | : | | |
| Ducks | 19,387 | 248 | 60 | Principal nesting areas |
| Coots | : | : | | Refuge swamp |

Reported by Paul D. Daly, Refuge Manager

INSTRUCTIONS (See Secs. 7531 through 7534, Wildlife Refuges Field Manual)

- Species** In addition to the birds listed on form, other species occurring on refuge during the reporting period should be added in appropriate spaces. Special attention should be given to those species of local and national significance.
- Weeks of Reporting Period:** Estimated average refuge populations.
- Estimated Waterfowl Days Use:** Average weekly populations x number of days present for each species.
- Production:** Estimated number of young produced based on observations and actual counts on representative breeding areas. Brood counts should be made on two or more areas aggregating 10% of the breeding habitat. Estimates having no basis in fact should be omitted.
- Total Days Use:** A summary of data recorded under (3).
- Peak Number:** Maximum number of waterfowl present on refuge during any census of reporting period.
- Total Production:** A summary of data recorded under (4).

WATERFOWL

REFUGE Prairie NWR

MONTHS OF September 1 TO December 31, 1969

| (1) Species | (2) Weeks of reporting period | | | | | | | | | |
|-------------------|----------------------------------|----------|-----------|-----------|-----------|------------|----------|----------|------------|-----------|
| | : 6 days | | | | | | | | | |
| | 9/1-9/6 | 9/7-9/13 | 9/14-9/20 | 9/21-9/27 | 9/28-10/4 | 10/5-10/11 | 10/12-18 | 10/19-25 | 10/26-11/1 | 11/2-11/8 |
| | : 1 | : 2 | : 3 | : 4 | : 5 | : 6 | : 7 | : 8 | : 9 | : 10 |
| Swans: | | | | | | | | | | |
| Whistling | | | | | | | | | | |
| Trumpeter | | | | | | | | | | |
| Geese: | | | | | | | | | | |
| Canada | | | | | 200 | 600 | 1000 | 2000 | 4200 | 5000 |
| Cackling | | | | | | | | | | |
| Brant | | | | | | | | | | |
| White-fronted | | | | | | | | | | |
| Snow | | | | | | | | 25 | 25 | 30 |
| Blue | | | | | | | | 25 | 25 | 225 |
| Other | | | | | | | | | | |
| Ducks: | | | | | | | | | | |
| Mallard | 20 | 30 | 30 | 50 | 80 | 300 | 300 | 800 | 500 | 3750 |
| Black | 50 | 75 | 150 | 200 | 400 | 500 | 500 | 600 | 300 | 1350 |
| Gadwall | | | | | | | | | | |
| Baldpate | | | | | | | | | | |
| Pintail | | | | | 75 | 75 | 100 | | 250 | 100 |
| Green-winged teal | | | | | 10 | | 60 | 15 | 15 | |
| Blue-winged teal | 5 | 10 | 10 | 25 | 50 | 10 | 10 | | | |
| Cinnamon teal | | | | | | | | | | |
| Shoveler | | | | | | | | | | |
| Wood | 250 | 250 | 350 | 350 | 500 | 650 | 1000 | 1500 | 800 | 2000 |
| Redhead | | | | | | | | | | |
| Ring-necked | | | | | | | | | | |
| Canvasback | | | | | | | | | | |
| Scaup | | | | | | | | 100 | | 60 |
| Goldeneye | | | | | | | | | | |
| Bufflehead | | | | | | | | | | |
| Ruddy | | | | | | | | 15 | | |
| Other | | | | | | | | | | |
| Coot | | | | | | 20 | 20 | 20 | 25 | 10 |

3-1750a
Cont. NR-1
(Rev. March 1953)

WATERFOWL
(Continuation Sheet)

REFUGE Prosperity N.R.

MONTHS OF Oct. 1 TO December 31, 1969

| (1) Species | (2) Weeks of reporting period | | | | | | | | (3) Estimated : waterfowl : days use : | | (4) Production : Broods : seen : total | |
|------------------------|----------------------------------|----------|----------|------------|---------|----------|----------|----------|---|--|--|--|
| | 11/1-15 | 11/16-22 | 11/23-29 | 11/30-12/6 | 12/7-13 | 12/14-20 | 12/21-27 | 12/28-31 | | | | |
| Swans: | | | | | | | | | | | | |
| Whistling | | | | 6 | | | 2 | | 56 | | | |
| Trumpeter | | | | | | | | | | | | |
| Geese: | | | | | | | | | | | | |
| Canada | 5000 | 5000 | 5200 | 7000 | 8000 | 11,500 | 10,000 | 10,000 | 492,900 | | | |
| Cackling | | | | | | | | | | | | |
| Brant | | | | | | | | | | | | |
| White-fronted | | | | | | | | | | | | |
| Snow | 30 | 30 | 30 | 30 | 30 | 30 | 30 | 30 | 2,150 | | | |
| Blue | 225 | 225 | 225 | 175 | 200 | 225 | 200 | 200 | 13,050 | | | |
| Other | | | | | | | | | | | | |
| Ducks: | | | | | | | | | | | | |
| Mallard | 3750 | 3500 | 4000 | 9500 | 6000 | 5,500 | 4,000 | 4,000 | 310,750 | | | |
| Black | 1500 | 1500 | 2000 | 3200 | 3200 | 1,600 | 2,400 | 2,400 | 145,225 | | | |
| Gadwall | | | | | | | | | | | | |
| Baldpate | | | | | | 25 | 40 | 40 | 615 | | | |
| Pintail | 100 | 1000 | 1000 | 850 | 1000 | 1,100 | 600 | 600 | 56,450 | | | |
| Green-winged teal | | 10 | 25 | | 25 | | 10 | 10 | 1,200 | | | |
| Blue-winged teal | | | | | | | | | 600 | | | |
| Cinnamon teal | | | | | | | | | | | | |
| Shoveler | | | | | | | | | | | | |
| Wood | 2000 | 2000 | 2000 | 2000 | 2000 | 1,000 | 500 | 500 | 135,600 | | | |
| Redhead | | | | | | | | | | | | |
| Ring-necked | | 100 | 100 | | 30 | | | | 1,010 | | | |
| Canvasback | | | | 10 | | | | | 70 | | | |
| Scaup | 60 | 60 | | | | 10 | | | 2,000 | | | |
| Goldeneye | | | | 10 | | | | | 70 | | | |
| Bufflehead | | | | 10 | | | | | 285 | | | |
| Ruddy | | | 15 | 10 | | | | | 665 | | | |
| Other <u>Merganser</u> | | 75 | | 20 | | | | | | | | |
| Common " | | | 20 | 100 | 100 | 75 | 150 | 150 | 3,715 | | | |
| Coot: | 10 | 10 | 10 | | | | 5 | 5 | 930 | | | |

(Over)

(5) (6) (7)
Total Days Use : Peak Number : Total Production

SUMMARY

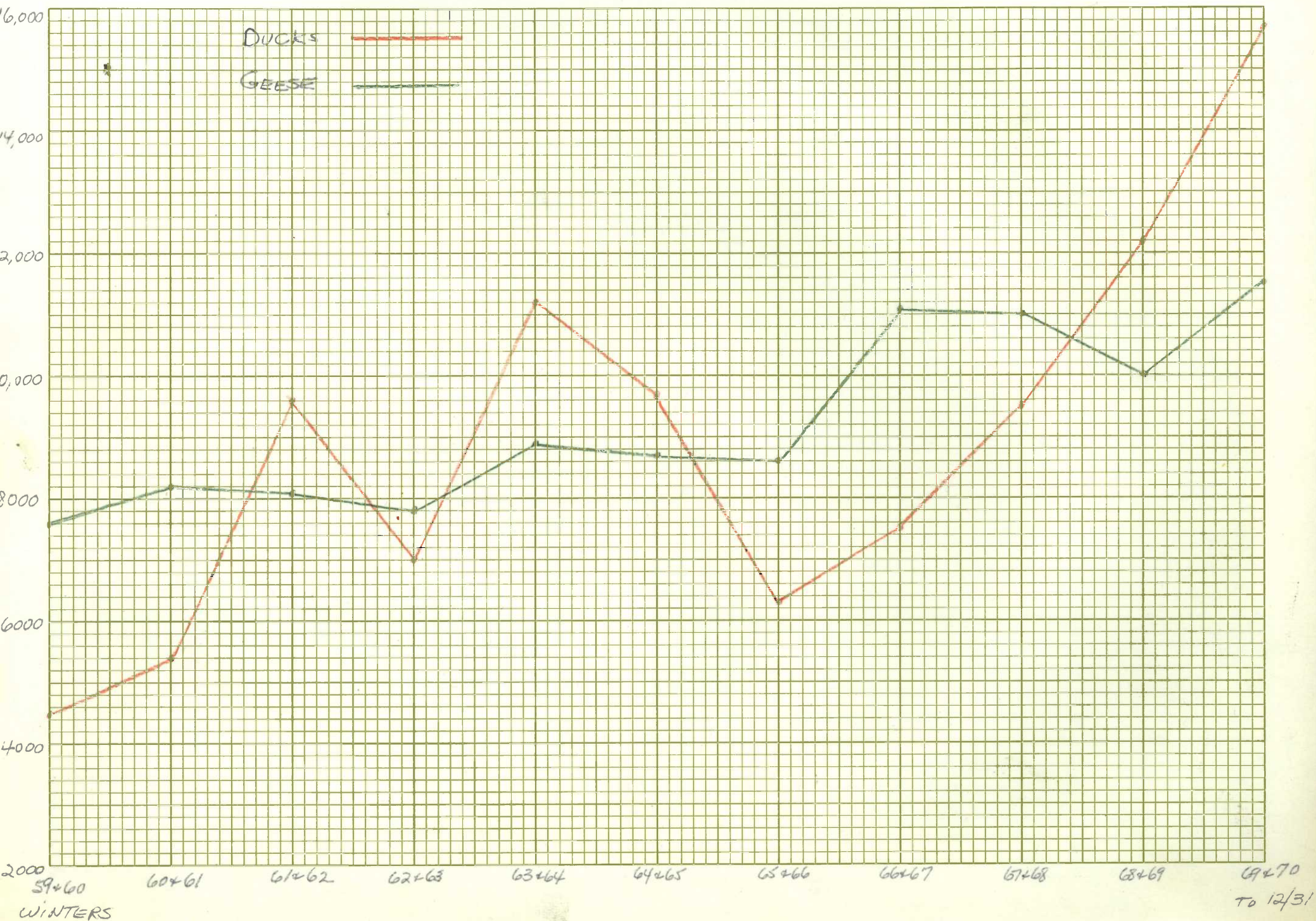
Swans - 50 : 6 : Principal feeding areas
Geese - 11,755 : : Principal nesting areas
Ducks - 15,700 : :
Coots - 930 : 25 :

Reported by Paul A. Daly

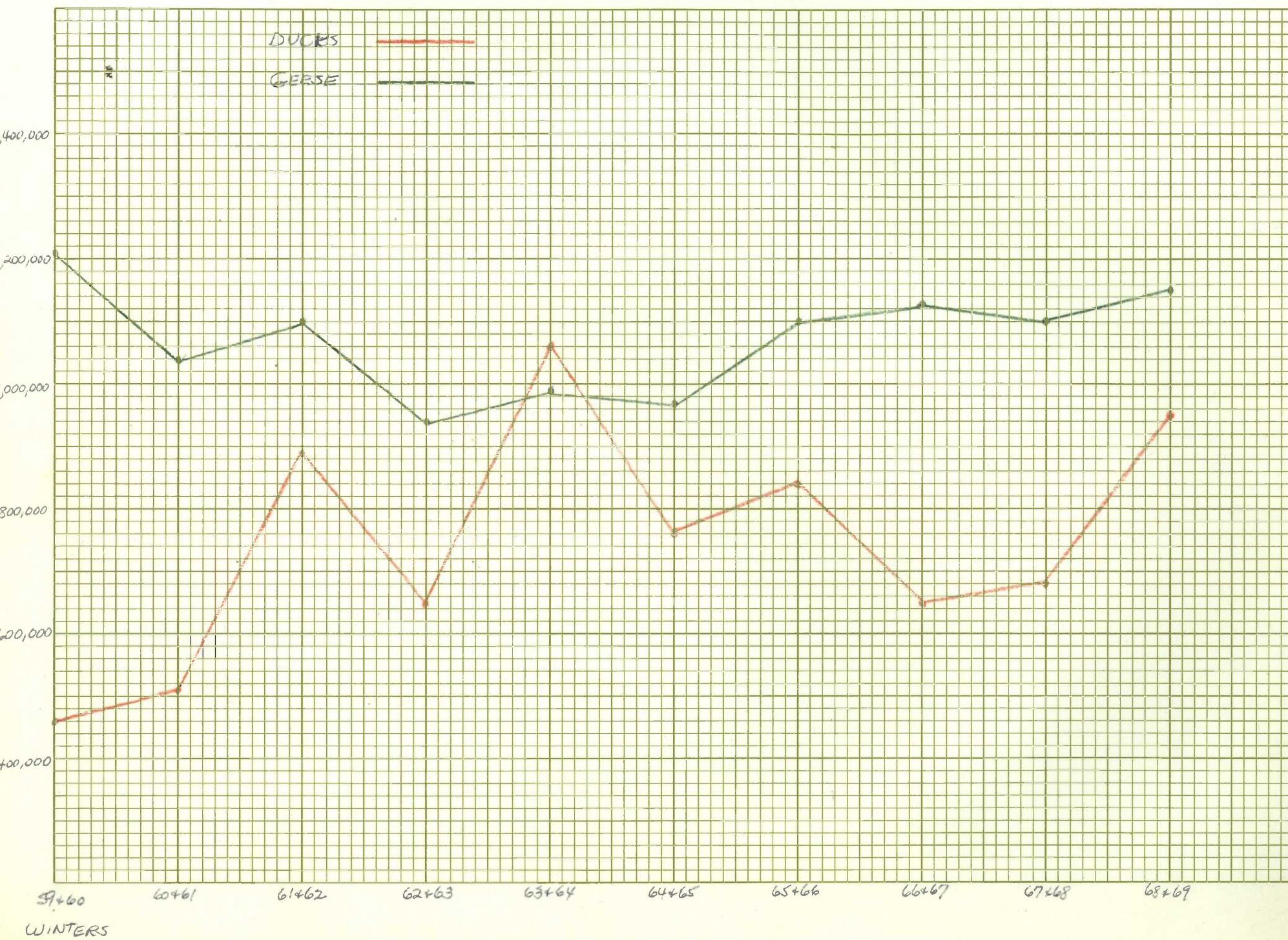
INSTRUCTIONS (See Secs. 7531 through 7534, Wildlife Refuges Field Manual)

- (1) Species In addition to the birds listed on form, other species occurring on refuge during the reporting period should be added in appropriate spaces. Special attention should be given to those species of local and national significance.
- (2) Weeks of Reporting Period: Estimated average refuge populations.
- (3) Estimated Waterfowl Days Use: Average weekly populations x number of days present for each species.
- (4) Production: Estimated number of young produced based on observations and actual counts on representative breeding areas. Brood counts should be made on two or more areas aggregating 10% of the breeding habitat. Estimates having no basis in fact should be omitted.
- (5) Total Days Use: A summary of data recorded under (3).
- (6) Peak Number: Maximum number of waterfowl present on refuge during any census of reporting period.
- (7) Total Production: A summary of data recorded under (4).

REFUGE DUCK AND GEESE PEAK NUMBERS FOR LAST ELEVEN YEARS



WATERFOWL USE DAYS FOR PAST TEN WINTER SEASONS



3-175-

Form NR-1A
(Aug. 1952)MIGRATORY BIRDS
(Other than Waterfowl)Refuge Presquille N.W.R.Months of January to April1969

| (1) Species | | (2) First Seen | | (3) Peak Concentration | | (4) Last Seen | | (5) Production | | (6) Total |
|--|--|-------------------|------|---------------------------|-----------------|------------------|------|-------------------|---------------|--------------|
| (3) Common Name | | Number | Date | Number | Inclusive Dates | Number | Date | Number Colonies | Total # Nests | Total Young |
| I. Water and Marsh Birds: | | | | | | | | | | |
| Great blue heron | | 14 | 1/1 | 32 | 2/26 | 14 | 4/30 | | | 2,000 |
| Little green heron | | 2 | 4/15 | 6 | 4/30 | 6 | 4/30 | | | 50 |
| American egret | | 1 | 4/15 | 3 | 4/30 | 3 | 4/30 | | | 50 |
| American bittern | | 1 | 2/6 | 1 | 2/6 | 1 | 2/6 | | | 25 |
| Pied-billed grebe | | 7 | 1/1 | 7 | 1/1 | 1 | 3/12 | | | 125 |
| Virginia rail | | 2 | 3/20 | 2 | 3/20 | 1 | 4/30 | | | 125 |
| II. Shorebirds, Gulls, and Terns: | | | | | | | | | | |
| Laughing gull | | 2 | 4/2 | 75 | 4/29 | 60 | 4/30 | | | 500 |
| Ring-billed gull | | 150 | 1/1 | 250 | 4/20 | 225 | 4/30 | | | 20,000 |
| Herring gull | | 32 | 1/1 | 150 | 4/20 | 50 | 4/30 | | | 10,000 |
| Great black-backed gull | | 21 | 1/1 | 21 | 1/1 | 6 | 4/30 | | | 500 |
| Common snipe | | 26 | 1/1 | 26 | 1/1 | 2 | 4/30 | | | 750 |
| Royal tern | | 4 | 4/12 | 4 | 4/12 | 2 | 4/30 | | | 50 |
| Common tern | | 2 | 3/16 | 8 | 4/30 | 8 | 4/30 | | | 150 |
| Killdeer | | 40 | 1/1 | 40 | 1/1 | 14 | 4/30 | | | 2,000 |
| Greater yellowlegs | | 7 | 3/28 | 12 | 4/10 | 10 | 4/30 | | | 500 |
| Spotted sandpiper | | 6 | 4/10 | 8 | 4/20 | 4 | 4/30 | | | 100 |

(over)

| (1) | (2) | (3) | (4) | (5) | (6) | | |
|-------------------------------|-----|------|-----|------|-----|------|-------|
| II. <u>Doves and Pigeons:</u> | | | | | 100 | | |
| Mourning dove | 20 | 1/1 | 110 | 2/15 | 15 | 4/30 | 2,000 |
| White-winged dove | | | | | | | |
| IV. <u>Predaceous Birds:</u> | | | | | | | |
| Golden eagle | | | | | | | |
| Duck hawk | | | | | | | |
| Horned owl | | | | | | | |
| Magpie | | | | | | | |
| Raven | | | | | | | |
| Crow | 50 | 1/1 | 60 | 1/25 | 30 | 4/30 | 3,500 |
| Bald Eagle | 1 | 1/1 | 1 | 1/1 | 1 | 4/27 | 25 |
| Osprey | 1 | 1/28 | 2 | 4/1 | 1 | 4/29 | 50 |

Reported by John C. Fields

INSTRUCTIONS (See Sec. 7532, Wildlife Refuges Field Manual)

- (1) Species: Use the correct names as found in the A.O.U. Checklist, 1931 Edition, and list group in A.O.U. order. Avoid general terms as "seagull", "tern", etc. In addition to the birds listed on form, other species occurring on refuge during the reporting period should be added in appropriate spaces. Special attention should be given to those species of local and National significance. Groups: I. Water and Marsh Birds (Gaviiformes to Ciconiiformes and Gruiformes)
 II. Shorebirds, Gulls and Terns (Charadriiformes)
 III. Doves and Pigeons (Columbiformes)
 IV. Predaceous Birds (Falconiformes, Strigiformes and predaceous Passeriformes)

(2) First Seen: The first migration record for the species for the reporting period.

(3) Peak Numbers: Estimated number and inclusive dates when peak population of the species occurred.

(4) Last Seen: The last refuge record for the species during the season concerned.

(5) Production: Estimated number of young produced based on observations and actual counts.

(6) Total: Estimated species days use (average population X no. days present) of refuge during the reporting period.

3-1751

Form NR-1A

(Aug. 1952)

MIGRATORY BIRDS
(Other than Waterfowl)

Refuge

Presquille NWR

Months of

May 1

to

August 31

1969

| (1) Species | (2) First Seen | | (3) Peak Concentration | | (4) Last Seen | | (5) Production | | | (6) Total |
|----------------------------------|-------------------|------|---------------------------|-----------------|------------------|------|-------------------|---------------|-------------|---------------|
| Common Name | Number | Date | Number | Inclusive Dates | Number | Date | Number Colonies | Total # Nests | Total Young | Estimated Use |
| I. <u>Water and Marsh Birds:</u> | | | | | | | | | | |
| Great Blue Heron | 14 | 5/1 | 14 | 5/1-8/31 | 14 | 8/31 | | | | 1722 |
| Little Green Heron | 6 | 5/1 | 8 | 6/15 | 3 | 8/31 | | | | 738 |
| American Egret | 3 | 5/1 | 25 | 8/10 | 22 | 8/31 | | | | 2091 |
| Cattle Egret | 6 | 5/20 | 6 | 5/20 | 2 | 6/26 | | | | 259 |
| Black Crowned Night Heron | 2 | 7/15 | 3 | 8/14 | 1 | 8/31 | | | | 94 |
| Virginia Rail | 1 | 5/1 | 2 | 5/10 | 1 | 5/19 | | | | 18 |
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(over)

| (1) | (2) | (3) | (4) | (5) | (6) | | |
|-------------------------------|-----|------|-----|-----------|-----|------|--------|
| II. <u>Doves and Pigeons:</u> | | | | | | | |
| Mourning dove | 15 | 5/1 | 400 | 7/20-8/25 | 250 | 8/31 | 27,306 |
| White-winged dove | | | | | | | |
| IV. <u>Predaceous Birds:</u> | | | | | | | |
| Golden eagle | | | | | | | |
| Duck hawk | | | | | | | |
| Horned owl | | | | | | | |
| Magpie | | | | | | | |
| Raven | | | | | | | |
| Crow | 30 | 5/1 | 60 | 7/25 | 25 | 8/31 | 4,674 |
| Bald Eagle | 1 | 5/29 | 1 | 5/29-8/20 | 1 | 8/20 | 83 |
| Osprey | 1 | 5/15 | 2 | 7/19 | 1 | 7/31 | 77 |
| Red Tailed Hawk | 1 | 5/5 | 3 | 8/10 | 1 | 8/31 | 236 |
| Red Shouldered Hawk | 2 | 5/5 | 2 | 5/5-8/31 | 2 | 8/31 | 236 |

Reported by Paul D. Daly, Refuge Manager

INSTRUCTIONS (See Sec. 7532, Wildlife Refuges Field Manual)

- (1) Species: Use the correct names as found in the A.O.U. Checklist, 1931 Edition, and list group in A.O.U. order. Avoid general terms as "seagull", "tern", etc. In addition to the birds listed on form, other species occurring on refuge during the reporting period should be added in appropriate spaces. Special attention should be given to those species of local and National significance. Groups: I. Water and Marsh Birds (Gaviiformes to Ciconiiformes and Gruiformes)
II. Shorebirds, Gulls and Terns (Charadriiformes)
III. Doves and Pigeons (Columbiformes)
IV. Predaceous Birds (Falconiformes, Strigiformes and predaceous Passeriformes)
- (2) First Seen: The first migration record for the species for the reporting period.
- (3) Peak Numbers: Estimated number and inclusive dates when peak population of the species occurred.
- (4) Last Seen: The last refuge record for the species during the season concerned.
- (5) Production: Estimated number of young produced based on observations and actual counts.
- (6) Total: Estimated species days use (average population X no. days present) of refuge during the reporting period.

3-1751

Form NR-1A

(Aug. 1952)

MIGRATORY BIRDS
(Other than Waterfowl)

Refuge

Presquille Bay

Months of

September

to

October 31

19 69

| (1) Species | | (2) First Seen | | (3) Peak Concentration | | (4) Last Seen | | (5) Production | | (6) Total |
|--|--|-------------------|-------|---------------------------|-----------------|------------------|-------|-------------------|---------------|---------------------------|
| Common Name | | Number | Date | Number | Inclusive Dates | Number | Date | Number Colonies | Total # Nests | Total Young Estimated Use |
| I. Water and Marsh Birds: | | | | | | | | | | |
| Great Blue Heron | | 14 | 9/1 | 20 | 10/16-12/31 | 20 | 12/31 | | | 2164 |
| Little Green Heron | | 3 | 9/1 | 12 | 9/15 | 3 | 11/10 | | | 426 |
| American Egret | | 22 | 9/1 | 22 | 9/1-10/5 | 2 | 12/10 | | | 1515 |
| Black Crowned Night Heron | | 1 | 9/1 | 2 | 10/20 | 1 | 11/15 | | | 76 |
| American Bittern | | 1 | 9/10 | 3 | 9/21 | 1 | 9/30 | | | 40 |
| Pied Billed Grebe | | 2 | 10/1 | 5 | 10/27 | 4 | 12/31 | | | 368 |
| Sora Rail | | 13 | 9/5 | 30 | 10/5-10/21 | 6 | 11/15 | | | 1136 |
| Virginia Rail | | 6 | 9/10 | 12 | 9/15-10/20 | 2 | 11/15 | | | 462 |
| | | 1 | 11/31 | 2 | 11/31-12/1 | 2 | 12/31 | | | 36 |
| | | 3 | 11/31 | 3 | 11/31 | 1 | 12/31 | | | 115 |
| | | 1 | 10/31 | 2 | 11/31 | 1 | 12/31 | | | 300 |
| | | 3 | 9/1 | 6 | 11/31 | 2 | 12/31 | | | 438 |
| | | 1 | 9/1 | 2 | 11/31 | 1 | 12/31 | | | 300 |
| | | 1 | 10/31 | 3 | 11/31 | 3 | 12/31 | | | 140 |
| | | 32 | 9/1 | 60 | 10/1 | 30 | 12/31 | | | 1730 |
| II. Shorebirds, Gulls, and Terns: | | | | | | | | | | |
| Greater Yellowlegs | | 6 | 9/1 | 6 | 9/1-9/10 | 2 | 9/25 | | | 120 |
| Laughing Gull | | 15 | 9/1 | 15 | 9/1-9/15 | 3 | 10/4 | | | 374 |
| Pink Billed Gull | | 100 | 9/1 | 150 | 9/21 | 120 | 12/31 | | | 15,000 |
| Herring Gull | | 60 | 9/1 | 20 | 10/5 | 50 | 12/31 | | | 9394 |
| Great Black Backed Gull | | 2 | 11/10 | 15 | 12/22 | 12 | 12/31 | | | 520 |
| Bonapartes Gull | | 2 | 10/25 | 2 | 10/25-12/1 | 1 | 12/22 | | | 116 |
| Common Snipe | | 3 | 9/6 | 25 | 12/15-12/31 | 25 | 12/31 | | | 2088 |
| Killdeer | | 18 | 9/1 | 26 | 9/21 | 16 | 12/31 | | | 2440 |
| Royal Tern | | 10 | 9/1 | 10 | 9/1-9/30 | 2 | 10/15 | | | 315 |
| Common Tern | | 20 | 9/1 | 20 | 9/1-9/13 | 3 | 10/20 | | | 730 |
| Forsters Tern | | 4 | 9/6 | 15 | 9/22 | 2 | 11/15 | | | 200 |
| Spotted Sandpiper | | 12 | 9/1 | 12 | 9/1-9/10 | 6 | 9/21 | | | 200 |

(over)

| (1) | (2) | (3) | (4) | (5) | (6) | | |
|-------------------------------|-----|-------|-----|-------------|-----|-------|--------|
| II. <u>Doves and Pigeons:</u> | | | | | | | |
| Mourning dove | 250 | 9/1 | 250 | 9/1-9/20 | 50 | 12/31 | 22,326 |
| White-winged dove | | | | | | | |
| IV. <u>Predaceous Birds:</u> | | | | | | | |
| Golden eagle | | | | | | | |
| Duck hawk | | | | | | | |
| Horned owl | | | | | | | |
| Magpie | | | | | | | |
| Raven | | | | | | | |
| Crow | 25 | 9/1 | 60 | 10/1 | 30 | 12/31 | 4,636 |
| Bald Eagle | 1 | 10/15 | 2 | 12/24 | 2 | 12/24 | 140 |
| Red Tailed Hawk | 1 | 9/1 | 5 | 11/15 | 4 | 12/31 | 366 |
| Red Shouldered Hawk | 2 | 9/1 | 6 | 12/10 | 5 | 12/31 | 488 |
| Barred Owl | 1 | 10/22 | 3 | 12/22 | 1 | 12/31 | 200 |
| Marsh Hawk | 2 | 11/5 | 2 | 11/5 | 1 | 12/31 | 112 |
| Sparrow Hawk | 1 | 11/23 | 3 | 12/10-12/31 | 3 | 12/31 | 76 |

Reported by Paul D. Daly, Refuge Mgr.

INSTRUCTIONS (See Sec. 7532, Wildlife Refuges Field Manual)

- (1) Species: Use the correct names as found in the A.O.U. Checklist, 1931 Edition, and list group in A.O.U. order. Avoid general terms as "seagull", "tern", etc. In addition to the birds listed on form, other species occurring on refuge during the reporting period should be added in appropriate spaces. Special attention should be given to those species of local and National significance. Groups: I. Water and Marsh Birds (Gaviiformes to Ciconiiformes and Gruiformes)
 II. Shorebirds, Gulls and Terns (Charadriiformes)
 III. Doves and Pigeons (Columbiformes)
 IV. Predaceous Birds (Falconiformes, Strigiformes and predaceous Passeriformes)

(2) First Seen: The first migration record for the species for the reporting period.

(3) Peak Numbers: Estimated number and inclusive dates when peak population of the species occurred.

(4) Last Seen: The last refuge record for the species during the season concerned.

(5) Production: Estimated number of young produced based on observations and actual counts.

(6) Total: Estimated species days use (average population X no. days present) of refuge during the reporting period.

UNITED STATES
DEPARTMENT OF THE INTERIOR
FISH AND WILDLIFE SERVICE
BUREAU OF SPORT FISHERIES AND WILDLIFE
WATERFOWL UTILIZATION OF REFUGE HABITAT

Refuge Presquille NWR For 12-month period ending August 31, 19 69

Reported by Paul D. Daly Title Refuge Manager

| (1) | (2) | (3) | (4) | (5) |
|--------------|--------------|-----------------|------------|------------|
| Area or Unit | Habitat | | Breeding | |
| Designation | Type Acreage | Use-days | Population | Production |
| | Crops 239 | Ducks 967,956 | 150 | 60 |
| | Upland 1 | Geese 1,157,030 | | |
| | Marsh 250 | Swans | | |
| | Water 1629 | Coots | | |
| | Total 2100 | Total 2,124,986 | | |
| | Crops | Ducks | | |
| | Upland | Geese | | |
| | Marsh | Swans | | |
| | Water | Coots | | |
| | Total | Total | | |
| | Crops | Ducks | | |
| | Upland | Geese | | |
| | Marsh | Swans | | |
| | Water | Coots | | |
| | Total | Total | | |
| | Crops | Ducks | | |
| | Upland | Geese | | |
| | Marsh | Swans | | |
| | Water | Coots | | |
| | Total | Total | | |
| | Crops | Ducks | | |
| | Upland | Geese | | |
| | Marsh | Swans | | |
| | Water | Coots | | |
| | Total | Total | | |
| | Crops | Ducks | | |
| | Upland | Geese | | |
| | Marsh | Swans | | |
| | Water | Coots | | |
| | Total | Total | | |
| | Crops | Ducks | | |
| | Upland | Geese | | |
| | Marsh | Swans | | |
| | Water | Coots | | |
| | Total | Total | | |
| | Crops | Ducks | | |
| | Upland | Geese | | |
| | Marsh | Swans | | |
| | Water | Coots | | |
| | Total | Total | | |

(over)

INSTRUCTIONS

All tabulated information should be based on the best available techniques for obtaining these data. Estimates having no foundation in fact must be omitted. Refuge grand totals for all categories should be provided in the spaces below the last unit tabulation. Additional forms should be used if the number of units reported upon exceeds the capacity of one page. This report embraces the preceding 12-month period, NOT the fiscal or calendar year, and is submitted annually with the May-August Narrative Report.

- (1) Area or Unit: A geographical unit which, because of size, terrain characteristics, habitat type and current or anticipated management practices, may be considered an entity apart from other areas in the refuge census pattern. The combined estimated acreages of all units should equal the total refuge area. A detailed map and accompanying verbal description of the habitat types of each unit should be forwarded with the initial report for each refuge, and thereafter need only be submitted to report changes in unit boundaries or their descriptions.
- (2) Habitat: Crops include all cultivated croplands such as cereals and green forage, planted food patches and agricultural row crops; upland is all uncultivated terrain lying above the plant communities requiring seasonal submergence or a completely saturated soil condition a part of each year, and includes lands whose temporary flooding facilitates use of non-aquatic type foods; marsh extends from the upland community to, but not including, the water type and consists of the relatively stable marginal or shallow-growing emergent vegetation type, including wet meadow and deep marsh; and in the water category are all other water areas inundated most or all of the growing season and extending from the deeper edge of the marsh zone to strictly open-water, embracing such habitat as shallow playa lakes, deep lakes and reservoirs, true shrub and tree swamps, open flowing water and maritime bays, sounds and estuaries. Acreage estimates for all four types should be computed and kept as accurate as possible through reference to available maps supplemented by periodic field observations. The sum of these estimates should equal the area of the entire unit.
- (3) Use-days: Use-days is computed by multiplying weekly waterfowl population figures by seven, and should agree with information reported on Form NR-1.
- (4) Breeding
Population: An estimate of the total breeding population of each category of birds for each area or unit.
- (5) Production: Estimated total number of young raised to flight age.

3-1752
(Form NR-2)
(April 1946)

UPLAND GAME BIRDS

Refuge Presquille

Months of January to April, 1969

| (1) Species | (2) Density | (3) Young Produced | (4) Sex Ratio | (5) Removals | (6) Total | (7) Remarks |
|-----------------|--|--------------------------|--|---------------------------|---|--|
| Common Name | Cover types, total acreage of habitat | Acres per Bird | Number Broods Observed Estimated Total | Percentage | Hunting For Re- stocking For Research | Estimated number using Refuge |
| Bob-white quail | Field borders & swamp edges (300 acres) | 10 | 0 | 1-1 | 0 | 30 |
| Turkey | Entire refuge Hardwood swamp, marshes & uplands (1,329 acres) | 83 | 0 | 3 males to 1 female | 0 | 16 |

Pertinent information not
specifically requested.
List introductions here.

*Only columns applicable to the period covered should be used.

INSTRUCTIONS

Form NR-2 - UPLAND GAME BIRDS.*

- (1) SPECIES: Use correct common name.
- (2) DENSITY: Applies particularly to those species considered in removal programs (public hunts, etc.). Detailed data may be omitted for species occurring in limited numbers. Density to be expressed in acres per animal by cover types. This information is to be prefaced by a statement from the refuge manager as to the number of acres in each cover type found on the refuge; once submitted, this information need not be repeated except as significant changes occur in the area of cover types. Cover types should be detailed enough to furnish the desired information but not so much as to obscure the general picture. Examples: spruce swamp, upland hardwoods, reverting agriculture land, bottomland hardwoods, short grass prairie, etc. Standard type symbols listed in Wildlife Management Series No. 7 should be used where possible. Figures submitted should be based on actual observations and counts on representative sample areas. Survey method used and size of sample area or areas should be indicated under Remarks.
- (3) YOUNG PRODUCED: Estimated number of young produced, based upon observations and actual counts in representative breeding habitat.
- (4) SEX RATIO: This column applies primarily to wild turkey, pheasants, etc. Include data on other species if available.
- (5) REMOVALS: Indicate total number in each category removed during the report period.
- (6) TOTAL: Estimated total number using the refuge during the report period. This may include resident birds plus those migrating into the refuge during certain seasons.
- (7) REMARKS: Indicate method used to determine population and area covered in survey. Also include other pertinent information not specifically requested.

*Only columns applicable to the period covered should be used.

3-1752
(Form NR-2)
(April 1946)

UPLAND GAME BIRDS

Refuge Presquile RWR Months of May 1 to August 31, 1969

| (1) Species Common Name | (2) Density Cover types, total acreage of habitat | (3) Young Produced | | (4) Sex Ratio Percentage | (5) Removals | | | (6) Total Estimated number using Refuge | (7) Remarks |
|-----------------------------------|---|--------------------------|------------------------------|---------------------------------------|------------------------|---------------------|-----------------|--|--|
| | | Acres per Bird | Number broods observed | | Hunting | For Re- stocking | For Research | | |
| Bob-White Quail | Field borders and swamp edges (300 acres) | 6 | 2 | 15 | Unknown | 0 | 0 | 50 | Pertinent information not specifically requested. List introductions here. |
| Pheasant | Field Borders and swamp edges 300 acres | 150 | 0 | 0 | 1 - 1 | 0 | 0 | 2 | |
| Turkey | Entire refuge hard- wood swamp, marshes and uplands (1329 acres) | 66 | 1 | 4 | 3 males to 1 female | 0 | 0 | 20 | |

*Only columns applicable to the period covered should be used.

INSTRUCTIONS

Form NR-2 - UPLAND GAME BIRDS.*

- | | (1) Species | (2) Density | (3) Young Produced | (4) Sex Ratio | (5) Removals | (6) Total | (7) Remarks |
|---------------------|--|-------------|--------------------|---------------|--------------|-----------|-------------|
| (1) SPECIES: | Use correct common name. | | | | | | |
| (2) DENSITY: | Applies particularly to those species considered in removal programs (public hunts, etc.). Detailed data may be omitted for species occurring in limited numbers. Density to be expressed in acres per animal by cover types. This information is to be prefaced by a statement from the refuge manager as to the number of acres in each cover type found on the refuge; once submitted, this information need not be repeated except as significant changes occur in the area of cover types. Cover types should be detailed enough to furnish the desired information but not so much as to obscure the general picture. Examples: spruce swamp, upland hardwoods, reverting agriculture land, bottomland hardwoods, short grass prairie, etc. Standard type symbols listed in Wildlife Management Series No. 7 should be used where possible. Figures submitted should be based on actual observations and counts on representative sample areas. Survey method used and size of sample area or areas should be indicated under Remarks. | | | | | | |
| (3) YOUNG PRODUCED: | Estimated number of young produced, based upon observations and actual counts in representative breeding habitat. | | | | | | |
| (4) SEX RATIO: | This column applies primarily to wild turkey, pheasants, etc. Include data on other species if available. | | | | | | |
| (5) REMOVALS: | Indicate total number in each category removed during the report period. | | | | | | |
| (6) TOTAL: | Estimated total number using the refuge during the report period. This may include resident birds plus those migrating into the refuge during certain seasons. | | | | | | |
| (7) REMARKS: | Indicate method used to determine population and area covered in survey. Also include other pertinent information not specifically requested. | | | | | | |

*Only columns applicable to the period covered should be used.

3-1752
(Form NR-2)
(April 1946)

UPLAND GAME BIRDS

Refuge Presquile NWR

Months of Sept 1 to Dec 31, 1969

| (1) Species | (2) Density | (3) Young Produced | | | (4) Sex Ratio | (5) Removals | | | (6) Total | (7) Remarks |
|-----------------|--|--------------------------|------------------------------|--------------------|------------------------|-----------------|---------------------|-----------------|--|--|
| | | Acres per Bird | Number broods observed | Estimated Total | | Hunting | For Re- stocking | For Research | | |
| Common Name | Cover types, total acreage of habitat | | | | Percentage | | | | Estimated number using Refuge | Pertinent information not specifically requested. List introductions here. |
| Bob-white Quail | Field borders and swamp edges (300 acres) | 6 | 0 | 0 | Unknown | 0 | 0 | 0 | 50 | At least three good sized coveys present |
| Pheasant | Field borders and swamp edges (300 acres) | 150 | 0 | 0 | 1 - 1 | 0 | 0 | 0 | 2 | |
| Turkey | Entire refuge hardwood swamp, marshes, and up- lands (1329 acres) | 53 | 0 | 0 | 3 males to 1 female | 0 | 0 | 0 | 25 | Very high population of turkeys on the refuge |

*Only columns applicable to the period covered should be used.

INSTRUCTIONS

Form NR-2 - UPLAND GAME BIRDS.*

- (1) SPECIES: Use correct common name.
- (2) DENSITY: Applies particularly to those species considered in removal programs (public hunts, etc.). Detailed data may be omitted for species occurring in limited numbers. Density to be expressed in acres per animal by cover types. This information is to be prefaced by a statement from the refuge manager as to the number of acres in each cover type found on the refuge; once submitted, this information need not be repeated except as significant changes occur in the area of cover types. Cover types should be detailed enough to furnish the desired information but not so much as to obscure the general picture. Examples: spruce swamp, upland hardwoods, reverting agriculture land, bottomland hardwoods, short grass prairie, etc. Standard type symbols listed in Wildlife Management Series No. 7 should be used where possible. Figures submitted should be based on actual observations and counts on representative sample areas. Survey method used and size of sample area or areas should be indicated under Remarks.
- (3) YOUNG PRODUCED: Estimated number of young produced, based upon observations and actual counts in representative breeding habitat.
- (4) SEX RATIO: This column applies primarily to wild turkey, pheasants, etc. Include data on other species if available.
- (5) REMOVALS: Indicate total number in each category removed during the report period.
- (6) TOTAL: Estimated total number using the refuge during the report period. This may include resident birds plus those migrating into the refuge during certain seasons.
- (7) REMARKS: Indicate method used to determine population and area covered in survey. Also include other pertinent information not specifically requested.

*Only columns applicable to the period covered should be used.

3-1753
Form NR-3
(June 1945)

BIG GAME

Refuge Prasquille NWR

Calendar Year 1969

| (1) Species | (2) Density | (3) Young Produced | (4) Removals | | | | (5) Losses | (6) Introductions | (7) Estimated Total Refuge Population | | (8) Sex Ratio | | |
|----------------------|--|--------------------------|-----------------|---------------------|------|-----------------|---------------|----------------------|--|--------|---------------------|------------------------------------|---------------------|
| Common Name | Cover types, total Acreage of Habitat | Number | Hunting | For Re- stocking | Sold | For Research | Predation | Disease | Winter Loss | Number | Source | At period of Greatest use | As of Dec. 31 |
| White-tailed Deer | entire Refuge | 15 | | | | | | | | | | | |
| Remarks: | | | | | | | | | | | | | |

17060

Reported by Paul D. Daly

INSTRUCTIONS

Form NR-3 - BIG GAME

- (1) SPECIES: Use correct common name; i.e., Mule deer, black-tailed deer, white-tailed deer. It is unnecessary to indicate sub-species such as northern or Louisiana white-tailed deer.
- (2) DENSITY: Detailed data may be omitted for species occurring in limited numbers. Density to be expressed in acres per animal by cover types. This information is to be prefaced by a statement from the refuge manager as to the number of acres in each cover type found on the refuge: once submitted, this information need not be repeated except as significant changes occur in the area of cover types. Cover types should be detailed enough to furnish the desired information but not so much as to obscure the general picture. Examples: spruce swamp, upland hardwoods, reverting agriculture land, bottomland hardwoods, short grass prairie, etc. Standard type symbols listed in Wildlife Management Series No. 7 should be used where possible. Figures submitted should be based on actual observations and counts on representative sample areas. Survey method used and size of sample area or areas should be indicated under Remarks.
- (3) YOUNG PRODUCED: Estimated total number of young produced on refuge.
- (4) REMOVALS: Indicate total number in each category removed during the year.
- (5) LOSSES: On the basis of known records or reliable estimates indicate total losses in each category during the year.
- (6) INTRODUCTIONS: Indicate the number and refuge or agency from which stock was secured.
- (7) TOTAL REFUGE POPULATION: Give the estimated population of each species on the refuge at period of its greatest abundance and also as of Dec. 31.
- (8) SEX RATIO: Indicate the percentage of males and females of each species as determined from field observations or through removals.

Remarks:

3-1754

Form NR-4

(June 1945)

SMALL MAMMALS

Refuge Praquile N.W.R.Year ending April 30, 1969

| (1) *Species | (2) Density | | (3) Removals | | | | | (4) Disposition of Furs | | | | | (5) Total | |
|---|---|------------------------|-----------------|----------------|-----------------------|---------------------|-------------------|----------------------------|-------------------|-----------------|------------------------------|-----------------|-------------------|-----------------|
| Common Name | Cover Types & Total Acreage of Habitat | Acres Per Animal | Hunting | Fur Harvest | Predator Control * | For Re- stocking | For Re- search | Share Trapping | | | Total Refuge Furs Shipped | Furs Donated | Furs Destroyed | Popula- tion |
| | | | | | | | | Permit Number | Trappers Share | Refuge share | | | | |
| Raccoon | 1,329 | 8 | 0 | 0 | 8 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 170 |
| Muskrat | Marsh, river & creek banks (500 acres) | 1.5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 400 |
| Striped skunk | Upland & edge (300 acres) | 15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 20 |
| Grey squirrel | Hardwood swamp & edges (800 acres) | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 160 |
| Ground hog | Uplands & edges (300 acres) | 6 | 0 | 0 | 25 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 50 |
| Red Fox | 1,200 | 200 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Cotton-tailed rabbit | Fields & edges (300 acres) | 15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 20 |
| Beaver | Tidal marsh & swamp (1000 acres) | 200 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 |
| * List removals by Predator Animal Hunter | | | | | | | | | | | | | | |

* List removals by Predator Animal Hunter

REMARKS:

Reported by John C. Fields

INSTRUCTIONS

Form NR-4 - SMALL MAMMALS (Include data on all species of importance in the management program; i. e., muskrats, beaver, coon, mink, coyote. Data on small rodents may be omitted except for estimated total population of each species considered in control operations.)

- (1) SPECIES: Use correct common name. Example: Striped skunk, spotted skunk, short-tailed weasel, gray squirrel, fox squirrel, white-tailed jackrabbit, etc. (Accepted common names in current use are found in the "Field Book of North American Mammals" by H. E. Anthony and the "Manual of the Vertebrate Animals of the Northeastern United States" by David Starr Jordan.)
- (2) DENSITY: Applies particularly to those species considered in removal programs. Detailed data may be omitted for species occurring in limited numbers. Density to be expressed in acres per animal by cover types. This information is to be prefaced by a statement from the refuge manager as to the number of acres in each cover type found on the refuge; once submitted, this information need not be repeated except as significant changes occur in the area of cover types. Cover types should be detailed enough to furnish the desired information but not so much as to obscure the general picture. Examples: spruce swamp, upland hardwoods, reverting agriculture land, bottom land hardwoods, short grass prairie, etc. Standard type symbols listed in Wildlife Management Series No. 7 should be used where possible. Figures submitted should be based on actual observations and counts on representative sample areas. Survey method used and size of sample area or areas should be indicated under Remarks.
- (3) REMOVALS: Indicate the total number under each category removed since April 30 of the previous year, including any taken on the refuge by Service Predatory Animal Hunter. Also show any removals not falling under headings listed.
- (4) DISPOSITION OF FUR: On share-trapped furs list the permit number, trapper's share, and refuge share. Indicate the number of pelts shipped to market, including furs taken by Service personnel. Total number of pelts of each species destroyed because of unprimeness or damaged condition, and furs donated to institutions or other agencies should be shown in the column provided.
- (5) TOTAL POPULATION: Estimated total population of each species reported on as of April 30.
- REMARKS: Indicate inventory method(s) used, size of sample area(s), introductions, and any other pertinent information not specifically requested.

Refuge Sanquillo Bay Year 1960

Botulism

Lead Poisoning or other Disease

Period of outbreak None

Period of heaviest losses _____

Losses:

| | Actual Count | Estimated |
|----------------|--------------|-----------|
| (a) Waterfowl | _____ | _____ |
| (b) Shorebirds | _____ | _____ |
| (c) Other | _____ | _____ |

| Number Hospitalized | No. Recovered | % Recovered |
|---------------------|---------------|-------------|
|---------------------|---------------|-------------|

| | | |
|----------------|-------|-------|
| (a) Waterfowl | _____ | _____ |
| (b) Shorebirds | _____ | _____ |
| (c) Other | _____ | _____ |

Areas affected (location and approximate acreage) _____

Water conditions (average depth of water in sickness areas, reflooding of exposed flats, etc.) _____

Condition of vegetation and invertebrate life _____

Remarks _____

Kind of disease None

Species affected _____

| Number Affected Species | Actual Count | Estimated |
|----------------------------|--------------|-----------|
| _____ | _____ | _____ |
| _____ | _____ | _____ |
| _____ | _____ | _____ |

Number Recovered _____

Number lost _____

Source of infection _____

Water conditions _____

Food conditions _____

Remarks _____

MONTHLY RECREATIONAL USE REPORT

Refuge name

Presquile N W R

State

Virginia

State

Code 46
(1-2)

Congressional

District Code 03
(3-4)

Refuge

Code 455
(5-7)

Report Yr.

Period 69 Mo. Annual
(8-11) Summary

(Card Columns). (12-13) (14-18) (19-25)

| ACTIVITY | Code | VISITS FOR THE MONTH | |
|-------------------------------|------|----------------------|-------------|
| | | Total Number | Total Hours |
| Hunting: Big Game | 01 | 397 | 2382 |
| Upland Game | 02 | | |
| Waterfowl | 03 | | |
| Other Migratory | 04 | | |
| Other | 05 | | |
| Bow | 06 | 397 | 2382 |
| Fishing: Salt Water | 07 | | |
| Warm Water | 08 | 275 | 550 |
| Cold Water | 09 | | |
| Environmental Education | 10 | | |
| Life Photography | 11 | 8 | 24 |
| Wildlife Observation | 12 | 294 | 971 |
| Conducted Programs | 13 | | |
| Field Trials | 14 | | |
| Wildlife Trails | 15 | | |
| Wildlife Tours/Routes | 16 | 157 | 534 |
| Visitor Contact Stations | 17 | | |
| Camping (wildlife related) | 18 | | |
| Picnicking (wildlife related) | 19 | 339 | 363 |
| Wildlife Interpretive Center | 20 | | |
| Off-Site Programs | 21 | 151 | 77 |

(Card Columns). (12-13) (14-18) (19-25)

| ACTIVITY | Code | VISITS FOR THE MONTH | |
|-------------------------------------|------|----------------------|-------------|
| | | Total Number | Total Hours |
| On-Site Programs | 22 | 175 | 625 |
| *Miscellaneous Wildlife | 23 | 20 | 69 |
| Swimming | 24 | | |
| Boating | 25 | | |
| Water Skiing | 26 | | |
| Camping | 27 | | |
| Group Camping | 28 | | |
| Picnicking | 29 | | |
| Horseback Riding | 30 | | |
| Bicycling | 31 | | |
| Winter Sports | 32 | | |
| Fruit, Nut and Vegetable Collecting | 33 | | |
| *Miscellaneous Non-Wildlife | 34 | 47 | 262 |
| Peak Load Day | 35 | 86 | |
| Actual Visits | 36 | 1188 | |
| Fee Area Use | 37 | | |
| Number of Fee Areas | 38 | (14-18) | |
| Fee Collections | 39 | \$ 21.00 | |
| Collection Costs | 40 | \$ | |

NONAGRICULTURAL COLLECTIONS, RECEIPTS, AND PLANTINGS⁽¹⁾

Refuge Presquile NWR Year 1969

| Species | Collections and Receipts (Seeds, rootstocks, trees, shrubs) | | | | | | Plantings (Marsh - Aquatic - Upland) | | | | | | |
|---------|--|---------------------|------|------------------------|------|-----------------------------------|---|--------------------------------------|--|---------------------------------------|------|----------|------------------|
| | Amount (lbs., bus., etc.) | (2) C or R | Date | Method or Source | Cost | (3) Total Amount on Hand | Location of Area Planted | Rate of Seeding or Planting | Amount Planted (Acres or Yards of Shoreline) | Amount and Nature of Propagules | Date | Survival | Cause of Loss |
| None | | | | | | | | | | | | | |

- (1) Report agronomic farm crops on Form NR-8
(2) C = Collections and R = Receipts
(3) Use "S" to denote surplus

Total acreage planted:

Marsh and aquatic _____
Hedgerows, cover patches _____
Food strips, food patches _____
Forest plantings _____

Remarks: _____

3-1758
Form NR-8
(Rev. Jan. 1956)

Fish and Wildlife Service Branch of Wildlife Refuges

CULTIVATED CROPS - HAYING - GRAZING

Refuge Presquille NWR

County Chesterfield

State Virginia

| Cultivated Crops Grown | Permittee's Share Harvested | | Government's Share or Return | | | | Total Acreage Planted | Green Manure, Cover and Water- fowl Browsing Crops Type and Kind | Total Acreage |
|---------------------------------------|--------------------------------|----------|------------------------------|----------|-------------|----------|-----------------------------|---|------------------|
| | Acres | Bu./Tons | Harvested | | Unharvested | | | | |
| | | | Acres | Bu./Tons | Acres | Bu./Tons | | | |
| Corn | 0 | 0 | 3 | 300 | 53 | 5300 | 56 | | |
| Buckwheat overseeded with ryegrass | 0 | 0 | 0 | 0 | 20 | 200/100 | 20 | | |
| Wheat | 0 | 0 | 0 | 0 | 76 | 0/8 | 76 | | |
| | | | | | | | | Clover - waterfowl browse | 4 |
| | | | | | | | | Soybeans - green manure | 66 |
| | | | | | | | | Permanent Pasture 95% Fescue | 93 |
| | | | | | | | | Fallow Ag. Land | 30 |

No. of Permittees: Agricultural Operations 0 Haying Operations 0 Grazing Operations 0

| Hay - Improved (Specify Kind) | Tons Harvested | Acres | Cash Revenue | GRAZING | Number Animals | AUM'S | Cash Revenue | ACREAGE |
|----------------------------------|-------------------|-------|-----------------|--|-------------------|-------|-----------------|---------|
| | | | | 1. Cattle | | | | |
| | | | | 2. Other | | | | |
| | | | | 1. Total Refuge Acreage Under Cultivation | | | | 239 |
| Hay - Wild | | | | 2. Acreage Cultivated as Service Operation | | | | 239 |

DIRECTIONS FOR PREPARING FORM NR-8
CULTIVATED CROPS - HAYING - GRAZING

Report Form NR-8 should be prepared on a calendar-year basis for all crops which were planted during the calendar year and for haying and grazing operations carried on during the same period.

Separate reports shall be furnished for Refuge lands in each county when a refuge is located in more than one county or State.

Cultivated Crops Grown - List all crops planted, grown and harvested on the refuge during the reporting period regardless of purpose. Crops in kind which have been planted by more than one permittee or this Service shall be combined for reporting purposes.

Permittee's Share - Only the number of acres utilized by the permittee for his own benefit should be shown under the Acres column, and only the number of bushels of farm crops harvested by the permittee for himself should be shown under the Bushels Harvested column. Report all crops harvested in bushels or fractions thereof except such crops as silage, watermelons, cotton, tobacco, and hay, which should be reported in tons or fractions thereof.

Government's Share or Return - Harvested - Show the acreage and number of bushels harvested for the Government of crops produced by permittees or refuge personnel. Unharvested - Show the exact acreage and the estimated number of bushels of grain available for wildlife. If grazing is made available to waterfowl through the planting of grain, cover, green manure, grazing or hay crops, estimate the tonnage of green food produced or utilized and report under Bushels Unharvested column.

Total Acreage Planted - Report all acreage planted, including crop failures.

Green Manure, Cover and Waterfowl Grazing Crops - Specify the acreage, kind and purpose of the crop. These crops and the acreage may be duplicated under cultivated crops if planted during the year, or a duplication may occur under hay if the crop results from a perennial planting.

Hay - Improved - List separately the kinds of improved hay grown. Annual plantings should also be reported under Cultivated Crops, and perennial hay should be listed in the same manner at time of planting.

Total Refuge Acreage Under Cultivation - Report total land area devoted to agricultural purposes during the year.

Ties.....

REFUGE GRAIN REPORT

Refuge Presquile NWRMonths of January through December, 19569

| (1) VARIETY* | (2) ON HAND BEGINNING OF PERIOD | (3) RECEIVED DURING PERIOD | (4) TOTAL | (5) GRAIN DISPOSED OF | | | | (6) ON HAND END OF PERIOD | (7) PROPOSED OR SUITABLE USE* | | |
|-------------------------|--|-------------------------------------|--------------|--------------------------|-----------|---------|-----------|------------------------------------|----------------------------------|---------|---------|
| | | | | Transferred | Seeded | Fed | Total | | Seed | Feed | Surplus |
| Wheat (Seneca) | 50 bu. | 105 bu. | 155 bu. | 0 | 105 bu. | 0 | 105 bu. | 50 bu. | 0 | 50 bu. | 0 |
| Corn | 350 bu. | 300 bu. | 650 bu. | 0 | 0 | 350 bu. | 350 bu. | 300 bu. | 0 | 300 bu. | 0 |
| Corn (Hybrid Seed) | 1 bu. | 10 bu. | 11 bu. | 0 | 11 bu. | 0 | 11 bu. | 0 | 0 | 0 | 0 |
| Buckwheat (Japanese) | 0 | 1200 lbs. | 1200 lbs. | 0 | 1200 lbs. | 0 | 1200 lbs. | 0 | 0 | 0 | 0 |
| Ryegrass Seed | 0 | 600 lbs. | 600 lbs. | 0 | 500 lbs. | 0 | 500 lbs. | 100 lbs. | 100 lbs. | 0 | 0 |
| Soybeans (Dare) | 0 | 80 bu. | 80 bu. | 0 | 80 bu. | 0 | 80 bu. | 0 | 0 | 0 | 0 |

(8) Indicate shipping or collection points Hopewell, Virginia(9) Grain is stored at Presquile National Wildlife Refuge(10) Remarks All grain on hand is to be used as waterfowl or dove bait and food.

*See instructions on back.

REFUGE GRAIN REPORT

This report should cover all grain on hand, received, or disposed of, during the period covered by this narrative report.

Report all grain in bushels. For the purpose of this report the following approximate weights of grain shall be considered equivalent to a bushel: Corn (shelled)—55 lb., corn (ear)—70 lb., wheat—60 lb., barley—50 lb., rye—55 lb., oats—30 lb., soy beans—60 lb., millet—50 lb., cowpeas—60 lb., and mixed—50 lb. In computing volume of granaries, multiply the cubic contents (cu. ft.) by 0.8 bushels.

- (1) List each type of grain separately and specifically, as flint corn, yellow dent corn, square deal hybrid corn, garnet wheat, red May wheat, durum wheat, spring wheat, proso millet, combine milo, new era cowpeas, mikado soy beans, etc. Mere listing as corn, wheat, and soybeans will not suffice, as specific details are necessary in considering transfer of seed supplies to other refuges. Include only domestic grains; aquatic and other seeds will be listed on NR-9.
- (3) Report all grain received during period from all sources, such as transfer, share cropping, or harvest from food patches.
- (4) A total of columns 2 and 3.
- (6) Column 4 less column 5.
- (7) This is a proposed break-down by varieties of grain listed in column 6. Indicate if grain is suitable for seeding new crops.
- (8) Nearest railroad station for shipping and receiving.
- (9) Where stored on refuge: "Headquarters granary," etc.
- (10) Indicate here the source of grain shipped in, destination of grain transferred, data on condition of grain, unusual uses proposed.

| (1) | OF GRAIN RECEIVED OR ON HAND | GRAIN RECEIVED | TOTAL | GRAIN SHIPPED IN | | | | GRAIN TRANSFERRED TO | GRAIN ON HAND | TOTAL | GRAIN |
|-----|------------------------------|----------------|-------|------------------|-------------|-----------|--------------|----------------------|---------------|-------|-------|
| | | | | Source | Destination | Condition | Unusual Uses | | | | |

ANNUAL REPORT OF PESTICIDE APPLICATION

Presquile NWR

Proposal Number

Reporting Year

69-1

1969

INSTRUCTIONS: Wildlife Refuges Manual, secs. 3252d, 3394b and 3395.

| Date(s) of Application | List of Target Pest(s) | Location of Area Treated | Total Acres Treated | Chemical(s) Used | Total Amount of Chemical Applied | Application Rate | Carrier and Rate | Method of Application |
|------------------------|---|--------------------------|---------------------|--------------------------------------|----------------------------------|------------------|------------------|-----------------------|
| (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) | (9) |
| May 26 | Jimson weed Dock Lambsquarter Wild Mustard Pig weed | Fields 2a, 2c, 5w, 5y | 56 | Atrazine - 80% wettable powder | 112 lbs. | 1.6 a.e./acre | Nitrogen | Commercial vendor |

10. Summary of results (continue on reverse side, if necessary)

Good results - very clean corn crop.

3-1979 (NR-12)
(9/63)

Bureau of Sport Fisheries and Wildlife

ANNUAL REPORT OF PESTICIDE APPLICATION

Refuge

Presquile NWR

Proposal Number

Reporting Year

69-2

1969

INSTRUCTIONS: Wildlife Refuges Manual, secs. 3252d, 3394b and 3395.

| Date(s) of Application | List of Target Pest(s) | Location of Area Treated | Total Acres Treated | Chemical(s) Used | Total Amount of Chemical Applied | Application Rate | Carrier and Rate | Method of Application |
|------------------------|------------------------|----------------------------------|---------------------|------------------|----------------------------------|---------------------|------------------|--------------------------|
| (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) | (9) |
| June 5 & July 8 | Johnson Grass | All refuge fields & fence row | 10 | Dalapon | 50 lbs. | 5 lbs.a.e./ acre | Water 100% | Refuge Tractor PTO |

10. Summary of results (continue on reverse side, if necessary)

Most Johnson Grass controlled by these two applications.

ANNUAL REPORT OF PESTICIDE APPLICATION

| | |
|-----------------|--|
| Proposal Number | |
|-----------------|--|

| Reporting Year |
|----------------|
|----------------|

69 - 3

1969

INSTRUCTIONS: Wildlife Refuges Manual, secs. 3252d, 3394b and 3395.

[illegible]

10. Summary of results (continue on reverse side, if necessary)

This proposal not carried out in 1969 due to good condition of corn after atrazine application and one cultivation.

HABITAT COMPOSITION

PRESQUIRE NATIONAL WILDLIFE REFUGE

CHESTERFIELD COUNTY, VIRGINIA

UNITED STATES
DEPARTMENT OF THE INTERIOR
77°17'

FISH AND WILDLIFE SERVICE
BUREAU OF SPORT FISHERIES AND WILDLIFE
77°14'

77°16'

77°15'

77°14'



SECRETARY OF INTERIOR
CLOSING ORDER BOUNDARY
DATED 8/13/54

LEGEND

REFUGE BOUNDARY

- MARSH
- AGRICULTURAL LAND
- WOODED SWAMP
- WATER

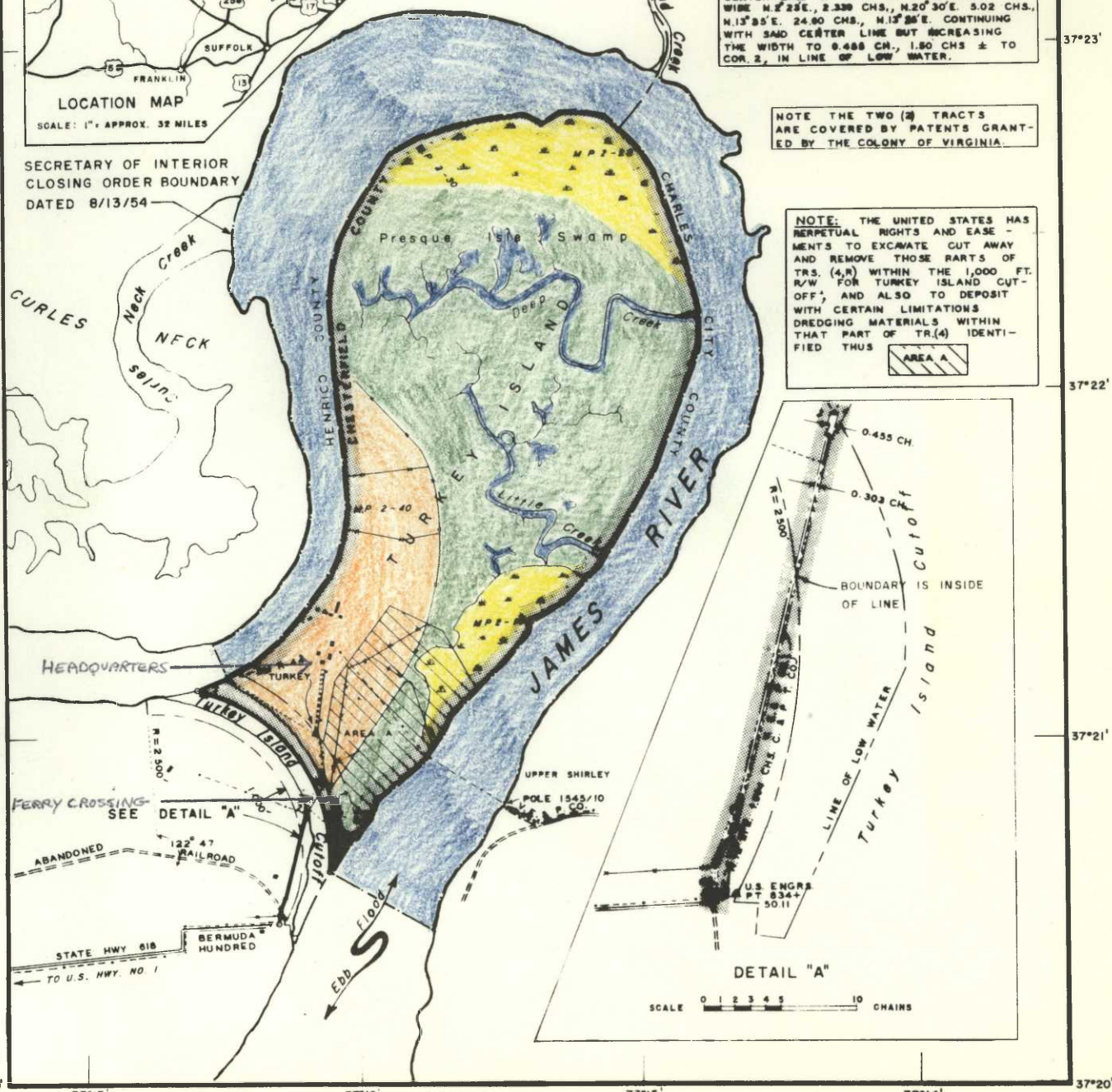
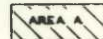
DESCRIPTION

TRACT (4) BEG. AT COR. 1, THE INTERSECTION OF LINE OF LOW WATER OF JAMES RIVER WITH CENTER LINE OF 1,000 FT. RIGHT OF WAY FOR TURKEY ISLAND CUTOFF; THENCE WITH SAID CENTER LINE ALONG A CURVE TO THE RIGHT FOR 88.05 CHS. TO COR. 2; THENCE WITH LINE OF LOW WATER UP STREAM AND ALONG THE RIGHT SHORE OF THE JAMES RIVER 488.48 CHS. TO THE P.O.B.

TRACT (4B) BEG. AT COR. 1, THENCE WITH CENTER LINE OF STRIP OF LAND 0.303 CH. WIDE N. 2° 25' E. 2.338 CHS., N. 20° 30' E. 5.02 CHS., N. 13° 35' E. 24.80 CHS., N. 13° 35' E. CONTINUING WITH SAID CENTER LINE BUT INCREASING THE WIDTH TO 6.488 CH., 1.80 CHS. ± TO COR. 2, IN LINE OF LOW WATER.

NOTE THE TWO (2) TRACTS ARE COVERED BY PATENTS GRANTED BY THE COLONY OF VIRGINIA.

NOTE: THE UNITED STATES HAS PERPETUAL RIGHTS AND EASEMENTS TO EXCAVATE CUT AWAY AND REMOVE THOSE PARTS OF TRS. (4, B) WITHIN THE 1,000 FT. R/W FOR TURKEY ISLAND CUTOFF, AND ALSO TO DEPOSIT WITH CERTAIN LIMITATIONS DREDGING MATERIALS WITHIN THAT PART OF TR. (4) IDENTIFIED THUS



COMPILED IN THE BRANCH OF REALTY
FROM SURVEYS BY B.S.F.W.

ATLANTA, GEORGIA AUGUST, 1988

Scale 0 20 40 60 80 CHAINS
0 1/4 1/2 3/4 1 MILE

6-1/2°
TRUE NORTH
MAGNETIC

MEAN
DECLINATION
1985

4R-VA-451-403



69-1 Since we do not get to shoot the cannon net often, we put two
nets together and try to catch as many Canadas as possible.
Fields



69-2 A new cannon net site was built this year. View from east
channel of James River.
Daly



69-3 Same area as in 69-2 looking east toward the river. Seven tons of gravel were spread on the site and it is ready for the 1970 banding period. Daly



69-4 Corn crop produced an excellent yield; this is the Golden Acres Growmaster variety. We averaged 100 bushels per acre on all corn. Daly



69-5 Clover crop in field#4.

Daly



69-6 Same field near river bank. This is the area where $1/5$ acre of land was lost to erosion during the August flood. Daly



69-7 Buckwheat strip in field #2A. Although quality of photo is poor; it does show that we had a very good buckwheat stand this year. Usually the deer do not let it get to the flowering stage. Daly



69-8 Sixty six acres of soybeans were plowed under in late July as green manure. These fields were then planted to winter wheat browse in September. Daly



69-9 Refuge access is by government operated ferry. We can fit large gas and oil tank trucks on, but we must carry them to the island and back on high tide. Daly



69-10 The great James River flood of August 1969. To the left of the photo is the cable which guides the ferry as it crosses the channel. The cable was stretched so tight at this point by force of the current that it nearly rode on top all the way across. Daly



69-11 At the height of the flood, a barge got loose upriver and struck the ferry as it passed through the channel. The ramp was torn loose from the land but fortunately didn't go far. Refuge equipment was able to pull the ramp and ferry back onto the island. Daly



69-12 We set the ramp back in place and anchored it much more securely. Maintenance man Vick is welding heavy chain to the ramp brace. Daly



69-13 Our boathouse is quite close to departing in this picture. If water was about 6" higher we would have lost it. As it was only minor repairs were necessary after the waters receded. Daly

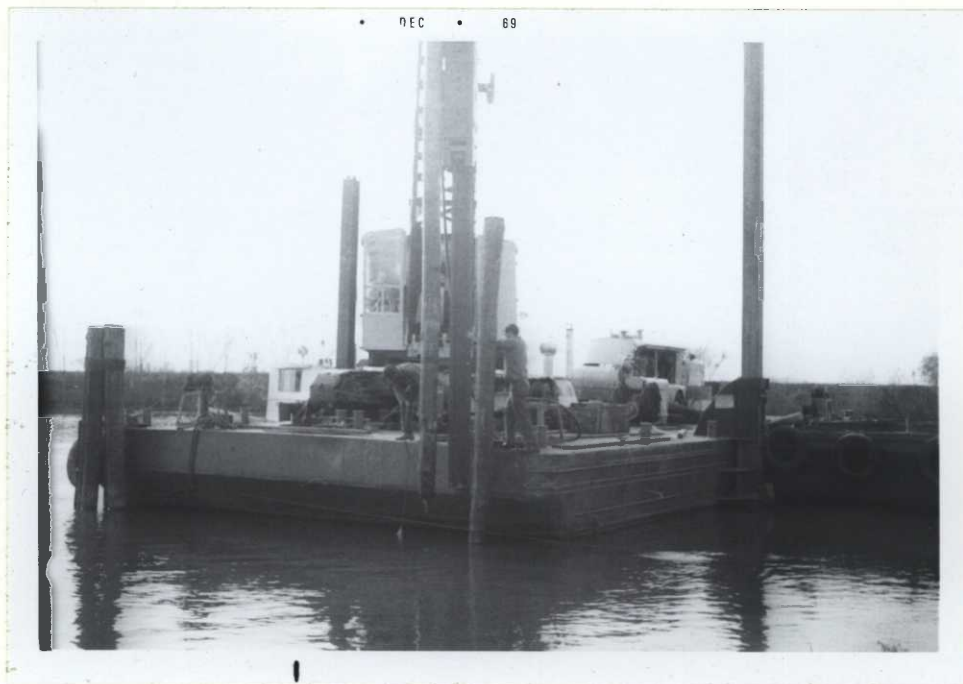


69-14 Flood waters from the swamp crept up into our lowest fescue fields; but most of the agricultural land is high enough to withstand any flooding. Daly



69-15 The most expensive consequence of the flood was the destruction of a piling cluster at the island ferry slip.

Daly



69-16 Replacement of pilings by contract. Barge pushed by tug-boat had to come from Richmond, about twenty miles upriver.

Vick



69-17 Finally the ferry has something to rest against once more.
Daly



69-18 Many groups toured the refuge this year. Here is an
Entomology Class from Virginia Commonwealth University on
an August field trip.
Daly



69-19 One of the many scout groups we hosted.

Daly



69-20 William Bryce of Norfolk with the biggest buck taken during the bow hunt this year. He dressed out at 103 lbs. and was the first deer that Mr. Bryce ever killed.

Daly



69-21 The youngest hunter to bag a deer; 14 year old Terry Rorrer of Richmond.

Daly



69-22 We removed the jawbone from each deer to determine age; a refuge workshop on dentistry training might be helpful in such instances.

Daly



69-23 Intermittent laborer Mike Tomlinson. Mike was an excellent worker. He is a veteran of Vietnam and is returning to college to study forestry or wildlife management. Daly



69-24 Grading of our access road through Presque Isle Farm and our main island road from the ferry to headquarters is about a twice a year job. Note the ancient pull type grader. Daly

3-1750
Form NR-1
(Rev. March 1953)

WATERFOWL

REFUGE Presquile NWR

MONTHS OF September 1 TO December 31, 1969

| (1) Species | (2) : 6 days <u>Weeks of reporting period</u> | | | | | | | | | |
|-------------------|--|----------|-----------|-----------|-----------|------------|----------|----------|------------|-----------|
| | 9/1-9/6 | 9/7-9/13 | 9/14-9/20 | 9/21-9/27 | 9/28-10/4 | 10/5-10/11 | 10/12-18 | 10/19-25 | 10/26-11/1 | 11/2-11/8 |
| | : 1 | : 2 | : 3 | : 4 | : 5 | : 6 | : 7 | : 8 | : 9 | : 10 |
| Swans: | | | | | | | | | | |
| Whistling | | | | | | | | | | |
| Trumpeter | | | | | | | | | | |
| Geese: | | | | | | | | | | |
| Canada | | | | | 200 | 600 | 1000 | 2000 | 4200 | 5000 |
| Cackling | | | | | | | | | | |
| Brant | | | | | | | | | | |
| White-fronted | | | | | | | | | | |
| Snow | | | | | | | | 25 | 25 | 30 |
| Blue | | | | | | | | 25 | 25 | 225 |
| Other | | | | | | | | | | |
| Ducks: | | | | | | | | | | |
| Mallard | 20 | 30 | 30 | 50 | 80 | 300 | 300 | 800 | 500 | 3750 |
| Black | 50 | 75 | 150 | 200 | 400 | 500 | 500 | 600 | 300 | 1350 |
| Gadwall | | | | | | | | | | |
| Baldpate | | | | | | | | | | |
| Pintail | | | | | 75 | 75 | 100 | | 250 | 100 |
| Green-winged teal | | | | | 10 | | 60 | 15 | 15 | |
| Blue-winged teal | 5 | 10 | 10 | 25 | 50 | 10 | 10 | | | |
| Cinnamon teal | | | | | | | | | | |
| Shoveler | | | | | | | | | | |
| Wood | 250 | 250 | 350 | 350 | 500 | 650 | 1000 | 1500 | 800 | 2000 |
| Redhead | | | | | | | | | | |
| Ring-necked | | | | | | | | | | |
| Canvasback | | | | | | | | | | |
| Scaup | | | | | | | | 100 | | 60 |
| Goldeneye | | | | | | | | | | |
| Bufflehead | | | | | | | | | | |
| Ruddy | | | | | | | | 15 | | |
| Other | | | | | | | | | | |
| Goot | | | | | | 20 | 20 | 20 | 25 | 10 |

3-1750a
Cont. NR-1
(Rev. March 1953)

WATERFOWL
(Continuation Sheet)

REFUGE Presquile NWR

MONTHS OF Sept. 1 TO December 31, 1969

| (1) Species | (2) Weeks of reporting period | | | | (3) 4 days: Estimated | | | | (4) Production | |
|--------------------|----------------------------------|----------|----------|------------|--------------------------|----------|----------|-----------|--------------------------------|--------------|
| | 11/9-15 | 11/16-22 | 11/23-29 | 11/30-12/6 | 12/7-13 | 12/14-20 | 12/21-27 | 12/28-1/3 | waterfowl : Broods : Estimated | seen : total |
| Swans: | | | | | | | | | | |
| Whistling | | | | 6 | | | 2 | | 56 | |
| Trumpeter | | | | | | | | | | |
| Geese: | | | | | | | | | | |
| Canada | 5000 | 5000 | 5200 | 7000 | 8000 | 11,500 | 10,000 | 10,000 | 492,900 | |
| Cackling | | | | | | | | | | |
| Brant | | | | | | | | | | |
| White-fronted | | | | | | | | | | |
| Snow | 30 | 30 | 30 | 30 | 30 | 30 | 30 | 30 | 2,150 | |
| Blue | 225 | 225 | 225 | 175 | 200 | 225 | 200 | 200 | 13,050 | |
| Other | | | | | | | | | | |
| Ducks: | | | | | | | | | | |
| Mallard | 3750 | 3500 | 4000 | 9500 | 6000 | 5,500 | 4,000 | 4,000 | 310,750 | |
| Black | 1500 | 1500 | 2000 | 3200 | 3200 | 1,600 | 2,400 | 2,400 | 146,225 | |
| Gadwall | | | | | | | | | | |
| Baldpate | | | | | | 25 | 40 | 40 | 615 | |
| Pintail | 100 | 1000 | 1000 | 850 | 1000 | 1,100 | 600 | 600 | 56,450 | |
| Green-winged teal | | 10 | 25 | | 25 | | 10 | 10 | 1,230 | |
| Blue-winged teal | | | | | | | | | 835 | |
| Cinnamon teal | | | | | | | | | | |
| Shoveler | | | | | | | | | | |
| Wood | 2000 | 2000 | 2000 | 2000 | 2000 | 1,000 | 500 | 500 | 135,800 | |
| Redhead | | | | | | | | | | |
| Ring-necked | | 100 | 100 | | 30 | | | | 1,610 | |
| Canvasback | | | | 10 | | | | | 70 | |
| Scaup | 60 | 60 | | | | 10 | | | 2,030 | |
| Goldeneye | | | | | | | | | | |
| Bufflehead | | | | 10 | | | | | 70 | |
| Ruddy | | | 15 | 10 | | | | | 280 | |
| Other H. Merganser | | 75 | | 20 | | | | | 665 | |
| Common " | | | 20 | 100 | 100 | 75 | 150 | 150 | 3,715 | |
| Coot: | 10 | 10 | 10 | | | | 5 | 5 | 930 | |

(Over)

(5) (6) (7)
Total Days Use : Peak Number : Total Production

SUMMARY

Swans 56 : 6 : Principal feeding areas Geese-refuge fields and marshes
Geese 508,100 : 11,755 : Ducks - refuge swamp and marshes
Ducks 660,345 : 15,700 : Principal nesting areas
Coots 930 : 25 :

Reported by Paul D. Daly

INSTRUCTIONS (See Secs. 7531 through 7534, Wildlife Refuges Field Manual)

- (1) Species In addition to the birds listed on form, other species occurring on refuge during the reporting period should be added in appropriate spaces. Special attention should be given to those species of local and national significance.
- (2) Weeks of Reporting Period: Estimated average refuge populations.
- (3) Estimated Waterfowl Days Use: Average weekly populations x number of days present for each species.
- (4) Production: Estimated number of young produced based on observations and actual counts on representative breeding areas. Brood counts should be made on two or more areas aggregating 10% of the breeding habitat. Estimates having no basis in fact should be omitted.
- (5) Total Days Use: A summary of data recorded under (3).
- (6) Peak Number: Maximum number of waterfowl present on refuge during any census of reporting period.
- (7) Total Production: A summary of data recorded under (4).

(Over)

3-1751

Form NR-1A

(Aug. 1952)

MIGRATORY BIRDS
(Other than Waterfowl)

Refuge Presquile NWR

Months of September

to December 31

19 69

| (1) Species Common Name | (2) First Seen | | (3) Peak Concentration | | (4) Last Seen | | (5) Production | | (6) Total |
|--|-------------------|-------|---------------------------|-----------------|------------------|-------|-------------------|---------------|--------------|
| | Number | Date | Number | Inclusive Dates | Number | Date | Number Colonies | Total # Nests | Total Young |
| I. Water and Marsh Birds: | | | | | | | | | |
| Great Blue Heron | 14 | 9/1 | 20 | 10/16-12/31 | 20 | 12/31 | | | 2164 |
| Little Green Heron | 3 | 9/1 | 12 | 9/15 | 3 | 11/10 | | | 426 |
| American Egret | 22 | 9/1 | 22 | 9/1-10/5 | 2 | 12/10 | | | 1515 |
| Black Crowned Night Heron | 1 | 9/1 | 2 | 10/20 | 1 | 11/15 | | | 76 |
| American Bittern | 1 | 9/10 | 3 | 9/21 | 1 | 9/30 | | | 40 |
| Pied Billed Grebe | 2 | 10/1 | 5 | 10/27 | 4 | 12/31 | | | 368 |
| Sora Rail | 13 | 9/5 | 30 | 10/5-10/21 | 6 | 11/15 | | | 1136 |
| Virginia Rail | 6 | 9/10 | 12 | 9/15-10/20 | 2 | 11/15 | | | 462 |
| Great Blue Heron | 1 | 11/31 | 3 | 11/31-12/31 | 3 | 12/31 | | | 52 |
| Little Green Heron | 3 | 11/2 | 3 | 11/2 | 1 | 12/31 | | | 175 |
| American Egret | 1 | 10/31 | 3 | 11/31 | 1 | 12/31 | | | 500 |
| Black Crowned Night Heron | 3 | 8/1 | 2 | 11/31 | 2 | 12/31 | | | 188 |
| American Bittern | 1 | 8/1 | 2 | 11/31 | 1 | 12/31 | | | 322 |
| Pied Billed Grebe | 1 | 10/31 | 3 | 11/31 | 3 | 12/31 | | | 170 |
| Sora Rail | 32 | 8/1 | 20 | 10/1 | 30 | 12/31 | | | 1,032 |
| II. Shorebirds, Gulls, and Terns: | | | | | | | | | |
| Greater Yellowlegs | 6 | 9/1 | 6 | 9/1-9/10 | 2 | 9/25 | | | 120 |
| Laughing Gull | 15 | 9/1 | 15 | 9/1-9/15 | 3 | 10/4 | | | 374 |
| Ring Billed Gull | 100 | 9/1 | 150 | 9/21 | 120 | 12/31 | | | 15,006 |
| Herring Gull | 60 | 9/1 | 90 | 10/5 | 80 | 12/31 | | | 9394 |
| Great Black Backed Gull | 2 | 11/10 | 15 | 12/22 | 12 | 12/31 | | | 520 |
| Bonapartes Gull | 2 | 10/25 | 2 | 10/25-12/1 | 1 | 12/22 | | | 116 |
| Common Snipe | 3 | 9/6 | 25 | 12/15-12/31 | 25 | 12/31 | | | 2088 |
| Killdeer | 18 | 9/1 | 26 | 9/21 | 16 | 12/31 | | | 2440 |
| Royal Tern | 10 | 9/1 | 10 | 9/1-9/30 | 2 | 10/15 | | | 315 |
| Common Tern | 20 | 9/1 | 20 | 9/1-9/18 | 3 | 10/20 | | | 700 |
| Forsters Tern | 4 | 9/1 | 15 | 9/12-9/10 | 2 | 11/15 | | | 490 |
| Spotted Sandpiper | 12 | 9/1 | 12 | 9/12-9/10 | 2 | 9/21 | | | 200 |

(over)

(OASL)

| (1) | (2) | (3) | (4) | (5) | (6) | |
|-------------------------------|-----|-------|-----|-------------|----------|--------|
| II. <u>Doves and Pigeons:</u> | | | | | | |
| Mourning dove | 250 | 9/1 | 250 | 9/1-9/20 | 50 12/31 | 22,326 |
| White-winged dove | | | | | | |
| IV. <u>Predaceous Birds:</u> | | | | | | |
| Golden eagle | | | | | | |
| Duck hawk | | | | | | |
| Horned owl | | | | | | |
| Magpie | | | | | | |
| Raven | | | | | | |
| Crow | 25 | 9/1 | 60 | 10/1 | 30 12/31 | 4,636 |
| Bald Eagle | 1 | 10/15 | 2 | 12/24 | 2 12/24 | 140 |
| Red Tailed Hawk | 1 | 9/1 | 5 | 11/15 | 4 12/31 | 366 |
| Red Shouldered Hawk | 2 | 9/1 | 6 | 12/10 | 5 12/31 | 488 |
| Barred Owl | 1 | 10/22 | 3 | 12/22 | 1 12/31 | 200 |
| Marsh Hawk | 2 | 11/5 | 2 | 11/5 | 1 12/31 | 112 |
| Sparrow Hawk | 1 | 11/23 | 3 | 12/10-12/31 | 3 12/31 | 76 |

Reported by Paul D. Daly, Refuge Mgr.

INSTRUCTIONS (See Sec. 7532, Wildlife Refuges Field Manual)

- (1) Species: Use the correct names as found in the A.O.U. Checklist, 1931 Edition, and list group in A.O.U. order. Avoid general terms as "seagull", "tern", etc. In addition to the birds listed on form, other species occurring on refuge during the reporting period should be added in appropriate spaces. Special attention should be given to those species of local and National significance. Groups: I. Water and Marsh Birds (Gaviiformes to Ciconiiformes and Gruiformes)
 II. Shorebirds, Gulls and Terns (Charadriiformes)
 III. Doves and Pigeons (Columbiformes)
 IV. Predaceous Birds (Falconiformes, Strigiformes and predaceous Passeriformes)
- (2) First Seen: The first migration record for the species for the reporting period.
- (3) Peak Numbers: Estimated number and inclusive dates when peak population of the species occurred.
- (4) Last Seen: The last refuge record for the species during the season concerned.
- (5) Production: Estimated number of young produced based on observations and actual counts.
- (6) Total: Estimated species days use (average population X no. days present) of refuge during the reporting period.

3-1752
(Form NR-2)
(April 1946)

UPLAND GAME BIRDS

Refuge Presquile NWR

Months of Sept 1 to Dec 31, 1969

| (1) Species Common Name | (2) Density Cover types, total acreage of habitat | (3) Young Produced Acres per Bird | (4) Sex Ratio Percentage | (5) Removals | | | (6) Total Estimated number using Refuge | (7) Remarks |
|-----------------------------------|--|--|---------------------------------------|-----------------|------------------------|-----------------|--|---|
| | | | | Hunting | For Re- stocking | For Research | | |
| Bob-White Quail | Field borders and swamp edges (300 acres) | 6 | 0 | 0 | 0 | 0 | 50 | Pertinent information not specifically requested. List introductions here. At least three good sized coveys present |
| Pheasant | Field borders and swamp edges (300 acres) | 150 | 0 | 0 | 0 | 0 | 2 | |
| Turkey | Entire refuge hardwood swamp, marshes, and up- lands (1329 acres) | 53 | 0 | 0 | 3 males to 1 female | 0 | 25 | Very high population of turkeys on the refuge |

INSTRUCTIONS

Form NR-2 - UPLAND GAME BIRDS.*

- (1) SPECIES: Use correct common name.
- (2) DENSITY: Applies particularly to those species considered in removal programs (public hunts, etc.). Detailed data may be omitted for species occurring in limited numbers. Density to be expressed in acres per animal by cover types. This information is to be prefaced by a statement from the refuge manager as to the number of acres in each cover type found on the refuge; once submitted, this information need not be repeated except as significant changes occur in the area of cover types. Cover types should be detailed enough to furnish the desired information but not so much as to obscure the general picture. Examples: spruce swamp, upland hardwoods, reverting agriculture land, bottomland hardwoods, short grass prairie, etc. Standard type symbols listed in Wildlife Management Series No. 7 should be used where possible. Figures submitted should be based on actual observations and counts on representative sample areas. Survey method used and size of sample area or areas should be indicated under Remarks.
- (3) YOUNG PRODUCED: Estimated number of young produced, based upon observations and actual counts in representative breeding habitat.
- (4) SEX RATIO: This column applies primarily to wild turkey, pheasants, etc. Include data on other species if available.
- (5) REMOVALS: Indicate total number in each category removed during the report period.
- (6) TOTAL: Estimated total number using the refuge during the report period. This may include resident birds plus those migrating into the refuge during certain seasons.
- (7) REMARKS: Indicate method used to determine population and area covered in survey. Also include other pertinent information not specifically requested.

*Only columns applicable to the period covered should be used.

Form NR-3
(June 1945)

BIG GAME

Refuge Presquile NWR

Calendar Year 1969

| (1) Species | (2) Density | (3) Young Produced | (4) Removals | | | | (5) Losses | | (6) Introductions | | (7) Estimated Total Refuge Population | | (8) Sex Ratio | |
|----------------------|--|--------------------------|-----------------|---------------------|------|-----------------|---------------|---------|----------------------|--------|--|------------------------------------|---------------------|-----|
| Common Name | Cover types, total Acreage of Habitat | Number | Hunting | For Re- stocking | Sold | For Research | Predation | Disease | Winter Loss | Number | Source | At period of Greatest use | As of Dec. 31 | |
| White-tailed Deer | Entire Refuge | 50 | 15 | | | | | | 4 | | | 150 | 150 | 1:1 |

Remarks:

Reported by Paul D. Daly

INSTRUCTIONS

Form NR-3 - BIG GAME

(1) SPECIES: Use correct common name; i.e., Mule deer, black-tailed deer, white-tailed deer. It is unnecessary to indicate sub-species such as northern or Louisiana white-tailed deer.

(2) DENSITY: Detailed data may be omitted for species occurring in limited numbers. Density to be expressed in acres per animal by cover types. This information is to be prefaced by a statement from the refuge manager as to the number of acres in each cover type found on the refuge; once submitted, this information need not be repeated except as significant changes occur in the area of cover types. Cover types should be detailed enough to furnish the desired information but not so much as to obscure the general picture. Examples: spruce swamp, upland hardwoods, reverting agriculture land, bottomland hardwoods, short grass prairie, etc. Standard type symbols listed in Wildlife Management Series No. 7 should be used where possible. Figures submitted should be based on actual observations and counts on representative sample areas. Survey method used and size of sample area or areas should be indicated under Remarks.

(3) YOUNG PRODUCED: Estimated total number of young produced on refuge.

(4) REMOVALS: Indicate total number in each category removed during the year.

(5) LOSSES: On the basis of known records or reliable estimates indicate total losses in each category during the year.

(6) INTRODUCTIONS: Indicate the number and refuge or agency from which stock was secured.

(7) TOTAL REFUGE POPULATION: Give the estimated population of each species on the refuge at period of its greatest abundance and also as of Dec. 31.

(8) SEX RATIO: Indicate the percentage of males and females of each species as determined from field observations or through removals.

116000

Reported by Paul D. Daly

DISEASE

Refuge Presquile NWR

Year 19.69

Botulism

Period of outbreak None

Period of heaviest losses _____

Losses:

| | Actual Count | Estimated |
|----------------|--------------|-----------|
| (a) Waterfowl | _____ | _____ |
| (b) Shorebirds | _____ | _____ |
| (c) Other | _____ | _____ |

| Number Hospitalized | No. Recovered | % Recovered |
|---------------------|---------------|-------------|
| (a) Waterfowl | _____ | _____ |
| (b) Shorebirds | _____ | _____ |
| (c) Other | _____ | _____ |

Areas affected (location and approximate acreage) _____

Water conditions (average depth of water in sickness areas, reflooding of exposed flats, etc.) _____

Condition of vegetation and invertebrate life _____

Remarks _____

Lead Poisoning or other Disease

Kind of disease None

Species affected _____

| Number Affected Species | Actual Count | Estimated |
|-------------------------|--------------|-----------|
| _____ | _____ | _____ |
| _____ | _____ | _____ |
| _____ | _____ | _____ |

Number Recovered _____

Number lost _____

Source of infection _____

Water conditions _____

Food conditions _____

Remarks _____

Bureau of Sport Fisheries and Wildlife
Division of Wildlife Refuges

MONTHLY RECREATIONAL USE REPORT

Refuge name

Presquile N W R

State

Virginia

State

Code 46
(1-2)

Congressional

District Code 03
(3-4)

Refuge

Code 455
(5-7)

Report Yr.

Period 69
(8-11)

Mo. Annual

Summary

(Card Columns). (12-13) (14-18) (19-25)

| ACTIVITY | Code | VISITS FOR THE MONTH | |
|-------------------------------|------|----------------------|-------------|
| | | Total Number | Total Hours |
| Hunting: Big Game | 01 | 397 | 2382 |
| Upland Game | 02 | | |
| Waterfowl | 03 | | |
| Other Migratory | 04 | | |
| Other | 05 | | |
| Bow | 06 | 397 | 2382 |
| Fishing: Salt Water | 07 | | |
| Warm Water | 08 | 275 | 550 |
| Cold Water | 09 | | |
| Environmental Education | 10 | | |
| Wildlife Photography | 11 | 8 | 24 |
| Wildlife Observation | 12 | 294 | 971 |
| Conducted Programs | 13 | | |
| Field Trials | 14 | | |
| Wildlife Trails | 15 | | |
| Wildlife Tours/Routes | 16 | 157 | 584 |
| Visitor Contact Stations | 17 | | |
| Camping (wildlife related) | 18 | | |
| Picnicking (wildlife related) | 19 | 389 | 368 |
| Wildlife Interpretive Center | 20 | | |
| Off-Site Programs | 21 | 151 | 73 |

(Card Columns). (12-13) (14-18) (19-25)

| ACTIVITY | Code | VISITS FOR THE MONTH | |
|-------------------------------------|------|----------------------|-------------|
| | | Total Number | Total Hours |
| On-Site Programs | 22 | 175 | 625 |
| *Miscellaneous Wildlife | 23 | 20 | 69 |
| Swimming | 24 | | |
| Boating | 25 | | |
| Water Skiing | 26 | | |
| Camping | 27 | | |
| Group Camping | 28 | | |
| Picnicking | 29 | | |
| Horseback Riding | 30 | | |
| Bicycling | 31 | | |
| Winter Sports | 32 | | |
| Fruit, Nut and Vegetable Collecting | 33 | | |
| *Miscellaneous Non-Wildlife | 34 | 41 | 262 |
| Peak Load Day | 35 | 86 | |
| Actual Visits | 36 | 1188 | |
| Fee Area Use | 37 | | |
| Number of Fee Areas | 38 | (14-18) | |
| Fee Collections | 39 | \$ 21.00 | |
| Collection Costs | 40 | \$ | |

Form 3-123

(Revised July 1969)

*Use reverse side to indicate types of activities summarized under miscellaneous codes 23 and 34. MAKE NO OTHER ENTRIES ON FACE OF THIS FORM.

U. S. Department Of The Interior
RECEIVED
JAN 26 1970
MAIL ROOM
Regional Office, Atlanta, Ga.
Bureau of Sport Fisheries & Wildlife

3-1757
Form NR-7
(Rev. June 1960)

NONAGRICULTURAL COLLECTIONS, RECEIPTS, AND PLANTINGS⁽¹⁾

Refuge Presquile NWR Year 19 69

| Species | Collections and Receipts (Seeds, rootstocks, trees, shrubs) | | | | | | Plantings (Marsh - Aquatic - Upland) | | | | | | |
|---------|--|---------------------|------|------------------------|------|-----------------------------------|---|--------------------------------------|--|---------------------------------------|------|----------|------------------|
| | Amount (Lbs., bus., etc.) | (2) C or R | Date | Method or Source | Cost | (3) Total Amount on Hand | Location of Area Planted | Rate of Seeding or Planting | Amount Planted (Acres or Yards of Shoreline) | Amount and Nature of Propagules | Date | Survival | Cause of Loss |
| None | | | | | | | | | | | | | |

- (1) Report agronomic farm crops on Form NR-8
(2) C = Collections and R = Receipts
(3) Use "S" to denote surplus

Total acreage planted:

Marsh and aquatic _____
Hedgerows, cover patches _____
Food strips, food patches _____
Forest plantings _____

Remarks: _____

3-1758
Form NR-8
(Rev. Jan. 1956)

Fish and Wildlife Service Branch of Wildlife Refuges

CULTIVATED CROPS - HAYING - GRAZING

Refuge Presquile NWR

County Chesterfield

State Virginia

| Cultivated Crops Grown | Permittee's Share Harvested | | Government's Share or Return | | | | Total Acreage Planted | Green Manure, Cover and Water- fowl Browsing Crops Type and Kind | Total Acreage |
|---------------------------------------|--------------------------------|----------|------------------------------|----------|-------------|----------|-----------------------------|---|------------------|
| | Acres | Bu./Tons | Harvested | | Unharvested | | | | |
| | | | Acres | Bu./Tons | Acres | Bu./Tons | | | |
| Corn | 0 | 0 | 3 | 300 | 53 | 5300 | 56 | | |
| Buckwheat overseeded with ryegrass | 0 | 0 | 0 | 0 | 20 | 200/100 | 20 | | |
| Wheat | 0 | 0 | 0 | 0 | 76 | 0/8 | 76 | | |
| | | | | | | | | Clover - waterfowl browse | 4 |
| | | | | | | | | Soybeans - green manure | 66 |
| | | | | | | | | Permanent Pasture 95% Fescue | 93 |
| | | | | | | | | Fallow Ag. Land | 30 |

No. of Permittees: Agricultural Operations 0 Haying Operations 0 Grazing Operations 0

| Hay - Improved (Specify Kind) | Tons Harvested | Acres | Cash Revenue | GRAZING | Number Animals | AUM'S | Cash Revenue | ACREAGE |
|----------------------------------|-------------------|-------|-----------------|--|-------------------|-------|-----------------|---------|
| | | | | 1. Cattle | | | | |
| | | | | 2. Other | | | | |
| | | | | 1. Total Refuge Acreage Under Cultivation | | | | 239 |
| Hay - Wild | | | | 2. Acreage Cultivated as Service Operation | | | | 239 |

DIRECTIONS FOR PREPARING FORM NR-8
CULTIVATED CROPS - HAYING - GRAZING

Report Form NR-8 should be prepared on a calendar-year basis for all crops which were planted during the calendar year and for haying and grazing operations carried on during the same period.

Separate reports shall be furnished for Refuge lands in each county when a refuge is located in more than one county or State.

Cultivated Crops Grown - List all crops planted, grown and harvested on the refuge during the reporting period regardless of purpose. Crops in kind which have been planted by more than one permittee or this Service shall be combined for reporting purposes.

Permittee's Share - Only the number of acres utilized by the permittee for his own benefit should be shown under the Acres column, and only the number of bushels of farm crops harvested by the permittee for himself should be shown under the Bushels Harvested column. Report all crops harvested in bushels or fractions thereof except such crops as silage, watermelons, cotton, tobacco, and hay, which should be reported in tons or fractions thereof.

Government's Share or Return - Harvested - Show the acreage and number of bushels harvested for the Government of crops produced by permittees or refuge personnel. Unharvested - Show the exact acreage and the estimated number of bushels of grain available for wildlife. If grazing is made available to waterfowl through the planting of grain, cover, green manure, grazing or hay crops, estimate the tonnage of green food produced or utilized and report under Bushels Unharvested column.

Total Acreage Planted - Report all acreage planted, including crop failures.

Green Manure, Cover and Waterfowl Grazing Crops - Specify the acreage, kind and purpose of the crop. These crops and the acreage may be duplicated under cultivated crops if planted during the year, or a duplication may occur under hay if the crop results from a perennial planting.

Hay - Improved - List separately the kinds of improved hay grown. Annual plantings should also be reported under Cultivated Crops, and perennial hay should be listed in the same manner at time of planting.

Total Refuge Acreage Under Cultivation - Report total land area devoted to agricultural purposes during the year.

3-1761
Form NR-11
(2/46)

TIMBER REMOVAL

Refuge Presquile NWR Year 19569.

| Permittee | Permit No. | Unit or Location | Acreage | No. of Units Expressed in B. F., ties, etc. | Rate of Charge | Total Income | Reservations and/or Diameter Limits | Species Cut |
|-----------|------------|------------------|---------|---|----------------|--------------|-------------------------------------|-------------|
| None | | | | | | | | |

Total acreage cut over.....

Total income.....

No. of units removed B. F.

Method of slash disposal.....

Cords.....

Ties.....

.....

REFUGE GRAIN REPORT

Refuge Presquile NWRMonths of January through December, 1969

| (1) VARIETY* | (2) ON HAND BEGINNING OF PERIOD | (3) RECEIVED DURING PERIOD | (4) TOTAL | (5) GRAIN DISPOSED OF | | | | (6) ON HAND END OF PERIOD | (7) PROPOSED OR SUITABLE USE* | | |
|-------------------------|--|-------------------------------------|--------------|--------------------------|-----------|---------|-----------|------------------------------------|----------------------------------|---------|---------|
| | | | | Transferred | Seeded | Fed | Total | | Seed | Feed | Surplus |
| Wheat (Seneca) | 50 bu. | 105 bu. | 155 bu. | 0 | 105 bu. | 0 | 105 bu. | 50 bu. | 0 | 50 bu. | 0 |
| Corn | 350 bu. | 300 bu. | 650 bu. | 0 | 0 | 350 bu. | 350 bu. | 300 bu. | 0 | 300 bu. | 0 |
| Corn (Hybrid Seed) | 1 bu. | 10 bu. | 11 bu. | 0 | 11 bu. | 0 | 11 bu. | 0 | 0 | 0 | 0 |
| Buckwheat (Japanese) | 0 | 1200 lbs. | 1200 lbs. | 0 | 1200 lbs. | 0 | 1200 lbs. | 0 | 0 | 0 | 0 |
| Ryegrass Seed | 0 | 600 lbs. | 600 lbs. | 0 | 500 lbs. | 0 | 500 lbs. | 100 lbs. | 100 lbs. | 0 | 0 |
| Soybeans (Dare) | 0 | 80 bu. | 80 bu. | 0 | 80 bu. | 0 | 80 bu. | 0 | 0 | 0 | 0 |

(8) Indicate shipping or collection points Hopewell, Virginia(9) Grain is stored at Presquile National Wildlife Refuge(10) Remarks All grain on hand is to be used as waterfowl or dove bait and food.

*See instructions on back.

NR-8a

REFUGE GRAIN REPORT

This report should cover all grain on hand, received, or disposed of, during the period covered by this narrative report.

Report all grain in bushels. For the purpose of this report the following approximate weights of grain shall be considered equivalent to a bushel: Corn (shelled)—55 lb., corn (ear)—70 lb., wheat—60 lb., barley—50 lb., rye—55 lb., oats—30 lb., soy beans—60 lb., millet—50 lb., cowpeas—60 lb., and mixed—50 lb. In computing volume of granaries, multiply the cubic contents (cu. ft.) by 0.8 bushels.

- (1) List each type of grain separately and specifically, as flint corn, yellow dent corn, square deal hybrid corn, garnet wheat, red May wheat, durum wheat, spring wheat, proso millet, combine milo, new era cowpeas, mikado soy beans, etc. Mere listing as corn, wheat, and soybeans will not suffice, as specific details are necessary in considering transfer of seed supplies to other refuges. Include only domestic grains; aquatic and other seeds will be listed on NR-9.
- (3) Report all grain received during period from all sources, such as transfer, share cropping, or harvest from food patches.
- (4) A total of columns 2 and 3.
- (6) Column 4 less column 5.
- (7) This is a proposed break-down by varieties of grain listed in column 6. Indicate if grain is suitable for seeding new crops.
- (8) Nearest railroad station for shipping and receiving.
- (9) Where stored on refuge: "Headquarters granary," etc.
- (10) Indicate here the source of grain shipped in, destination of grain transferred, data on condition of grain, unusual uses proposed.

3-1979 (NR-12)
(9/63)

Bureau of Sport Fisheries and Wildlife

ANNUAL REPORT OF PESTICIDE APPLICATION

Refuge

Presquile NWR

Proposal Number

Reporting Year

69-1

1969

INSTRUCTIONS: Wildlife Refuges Manual, secs. 3252d, 3394b and 3395.

| Date(s) of Application | List of Target Pest(s) | Location of Area Treated | Total Acres Treated | Chemical(s) Used | Total Amount of Chemical Applied | Application Rate | Carrier and Rate | Method of Application |
|------------------------|---|--------------------------|---------------------|--------------------------------------|----------------------------------|------------------|------------------|-----------------------|
| (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) | (9) |
| May 26 | Jimson weed Dock Lambsquarter Wild Mustard Pig weed | Fields 2a, 2c, 5w, 5y | 56 | Atrazine - 80% wettable powder | 112 lbs. | 1.6 a.e./acre | Nitrogen | Commercial vendor |

10. Summary of results (continue on reverse side, if necessary)

Good results - very clean corn crop.

3-1979 (NR-12)
(9/63)

Bureau of Sport Fisheries and Wildlife

Refuge

Presquile NWR

ANNUAL REPORT OF PESTICIDE APPLICATION

Proposal Number

Reporting Year

69-2

1969

INSTRUCTIONS: Wildlife Refuges Manual, secs. 3252d, 3394b and 3395.

| Date(s) of Application | List of Target Pest(s) | Location of Area Treated | Total Acres Treated | Chemical(s) Used | Total Amount of Chemical Applied | Application Rate | Carrier and Rate | Method of Application |
|------------------------|------------------------|----------------------------------|---------------------|------------------|----------------------------------|---------------------|------------------|--------------------------|
| (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) | (9) |
| June 5 & July 8 | Johnson Grass | All refuge fields & fence row | 10 | Dalapon | 50 lbs. | 5 lbs.a.e./ acre | Water 100% | Refuge Tractor PTO |

10. Summary of results (continue on reverse side, if necessary)

Most Johnson Grass controlled by these two applications.

3-1979 (NR-12)
(9/63)

Bureau of Sport Fisheries and Wildlife

ANNUAL REPORT OF PESTICIDE APPLICATION

Refuge

Presquile NWR

Proposal Number

69 - 3

Reporting Year

1969

INSTRUCTIONS: Wildlife Refuges Manual, secs. 3252d, 3394b and 3395.

| Date(s) of Application | List of Target Pest(s) | Location of Area Treated | Total Acres Treated | Chemical(s) Used | Total Amount of Chemical Applied | Application Rate | Carrier and Rate | Method of Application |
|---------------------------|---------------------------|--------------------------------|---------------------------|---------------------|--|---------------------|------------------------|-----------------------------|
| (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) | (9) |
| | | | | | | | | |

10. Summary of results (continue on reverse side, if necessary)

This proposal not carried out in 1969 due to good condition of corn after atrazine application and one cultivation.